Addendum to the Remedial Action Work Plan for Source Reduction

Dayco Corporation/L.E. Carpenter Superfund Site

USEPA ID NJD002168748

September 2009, Revised July 2011

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Prepared For
Dayco Corporation/L.E. Carpenter Superfund Site

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Preface

The original Remedial Action Work Plan (RAWP) Addendum (RMT, 2009) was submitted to United States Environmental Protection Agency (USEPA) on September 3, 2009. Consistent with the 2009 Unilateral Administrative Order (UAO), and Statement of Work (SOW), the RAWP Addendum addressed three remaining on-site Areas of Concern (AOCs) outlined in the SOW, namely:

- MW19/Hot Spot 1 area (MW19HS1)
- MW-30 area
- Shallow groundwater

Status of the individual AOCs are as follows

MW19/Hot Spot 1 Area

In an effort to expedite activities in the MW19HS1 area, the MW19HS1-specific aspects of this revised RAWP Addendum were conditionally approved by USEPA on December 21, 2009. Implementation of the MW19/HS-1 area remediation began on January 11, 2010 and was completed in mid-April 2010. Documentation of the MW19HS1 remediation activities were presented in an Addendum to the Remedial Action Report (RAR Addendum), submitted on July 19, 2010, along with a proposed post remedial monitoring plan (PRMP) which included supplemental monitoring well installation, soil gas sampling, and groundwater quality analysis for the area. Post remedial monitoring as proposed is being implemented. The RAR Addendum and PRMP are under review by USEPA.

MW30 Area

Activities to further evaluate the potential for residual source areas in the wetland area and a pilot test to evaluate polishing-remediation of dissolved bis 2-ethylhexylphthalate (DEHP) was presented in the RAWP Addendum (RMT, 2009). USEPA provided comments on the RAWP Addendum in an email dated December 21, 2009. Responses to the MW-30 area specific comments were submitted to the USEPA on February 1, 2010 and approved by USEPA in their email dated February 22, 2010. This revised RAWP Addendum incorporates agency review comments for the MW-30 area.

Shallow Groundwater

Quarterly groundwater and surface water monitoring consistent with the revised RAWP Addendum is being implemented for the Site. Current shallow groundwater quality data are summarized in quarterly monitoring reports prepared for the site.

Addendum Updates

Given that data collection and remediation activities outlined in this RAWP Addendum for the MW19HS1 area and shallow groundwater has been completed and documented elsewhere, certain sections of this workplan have been not been modified from the original September 2009 submittal. Only those sections requiring updates to reflect resolution of responses to agency comments and UAO compliance activities have been modified, as follows:

Document Section	Note
TRC Signature Page	New
Preface	New
Table of Contents	Updated
Section 1 – Introduction	Updated
Section 2 – Regulatory Oversight and Compliance	Updated
Section 3 – AOCs, COCs, and Performance Standards	Unchanged from Original
Section 4 – AOC Specific Regulatory Compliance and Path Forward Strategy	Unchanged from Original
Section 5 – AOC Investigative and Remedial Background ?	Unchanged from Original
Section 6 – Site Characteristics	Unchanged from Original
Section 7 – AOC Current Conditions	Unchanged from Original
Section 8 – MW-30 Remedial Investigation	Modified to reflect • resolution of Agency review comments • clarification of sediment sampling intervals • inclusion of an MW-30 bench-scale study
Section 9 – MW19HS1 Soil Remediation	Modified to reflect • resolution of Agency review comments
Section 10 – Cost and Schedule	Unchanged from Original
Section 11 – Community Relations	Unchanged from Original
Tables	Updated
Figures	Update Figure 15 only
Appendix A – UAO and SOW	Unchanged from Original
Appendix B – USEPA Lead Agency Correspondence	Unchanged from Original
Appendix C – AOC Regulatory Review Correspondence	Unchanged from Original
Appendix D – MW-30 RIW Response to Comments	Unchanged from Original
Appendix E – RAWP, RAR, and ESD Regulatory Correspondence	Updated with RAWP Response to Comments
Appendix F – Site Boring Logs	Unchanged from Original
Appendix G – Wetland, Floodplain and Floodway Permitting Information	Updated with a copy of FLUR permit
Appendix H – SAP/QAPP, CQAPP, and HASP	Unchanged from Original
Appendix I – Project Schedule	Updated Schedule for MW-30 only
Appendix J – Costs	Unchanged from Original

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Section 1 Introduction

Initial environmental investigations at the Dayco Corporation/L.E. Carpenter Superfund site (herein the "Site") were performed in response to New Jersey Department of Environmental Protection (NJDEP) sampling activities conducted in 1980 and 1981. These activities resulted in L.E. Carpenter & Co. (LEC) entering into an Administrative Consent Order (ACO) in 1982. The Site was added to the National Priorities List (NPL) in 1985. The 1982 ACO was superseded by an additional ACO in 1986, which required LEC to initiate the remedial investigation and a remedial investigation/feasibility study (RI/FS) process in accordance with Federal requirements. Following completion of the RI/FS, NJDEP issued a Record of Decision (ROD) for the Site in 1994. LEC has investigated, remediated, and monitored the Site in compliance with the 1986 ACO under the direction of the NJDEP in the lead role with support from the USEPA for thirty years. Significant advancement towards Site closure, following the implementation in 2005 of the NJDEP approved 2004 Remedial Action Work Plan for Source Reduction (RA Work Plan), came in the form of residential closure under the 2007 Explanation of Significant Differences (ESD) for "Hot Spot" Site soils outlined in the 1994 ROD.

In 2008, USEPA initiated discussions with LEC aimed at transferring the role of lead agency to USEPA. As outlined further in this work plan addendum, USEPA assumed role as lead agency in August 2009, directing further cleanup work under the requirements of a new Unilateral Administrative Order (UAO), and Statement of Work (SOW). The new SOW focuses on the three remaining on-site Areas of Concern (AOCs).

- MW19/Hot Spot 1 area (MW19HS1)
- MW-30 area
- Shallow groundwater

1.1 Scope and Objectives

The scope of work outlined in this work plan addendum focuses on completion of Section I.A.1 of the SOW. Specifically, the scope of work includes:

- Implementing a 1994 ROD approved soil remedy at the MW19HS1 residual source area.
- Further nature and extent delineation of residual source mass in the MW-30 area.
- Initiating a groundwater biodegradation pilot study in the MW-30 area.

The primary objectives of this work plan addendum are to:

- Satisfy the administrative and technical requirements of the new UAO and SOW with regards to the two remaining residual source AOCs: MW-30 and MW19HS1.
- Collect sufficient data in the MW-30 area to determine the nature and scale of a 1994 ROD approved soil remedial measure that, when implemented, will prevent further groundwater contamination and future discharge of Site related contaminants to the Rockaway River, wetland areas and the drainage ditch.
- Comply with the 1994 ROD soil remedy, as modified by the USEPA September 2007 Explanation of Significant Differences (ESD), and maximize the removal of contaminant mass in the MW19HS1 area to further enhance the natural degradation of Contaminants of Concern (COCs) dissolved in shallow groundwater to or below groundwater performance standards.

1.2 Site Location

The Site is located at 170 North Main Street, Borough of Wharton, Morris County, New Jersey (Figure 1). The Site comprises Block 301, Lot 1 and Block 801, Lot 3 on the tax map of the Borough of Wharton, and occupies approximately 13 acres of vacant land in a mixed-use industrial, commercial, and residential area. The Site is bordered to the south by the Rockaway River; by a vacant lot (Wharton Enterprises) to the east-southeast; and by a former compressed gas facility (Air Products) to the northeast. A residential/commercial area borders the Site to the northwest (Ross Street) and North Main Street borders the Site to the west. A drainage ditch is located between the Air Products property and the Site. A pedestrian foot trail (rails-to-trails area), constructed along the former railroad bed, bisects the Site from north to south. During active LEC operations, the Site consisted of several buildings and structures, some of which were partially demolished during the early 1990's as part of Site decommissioning activities. Buildings 8, 15, 16 and 17 located to the west of the rails-to-trails area remain. Figure 2 is a map of the general Site plan that depicts individual buildings present at the Site and other pertinent Site features.

1.3 Site Operational History

As outlined below, historical Site operations have been subdivided into two categories (1) mining and forging, and (2) vinyl manufacturing.

1.3.1 Mining and Forging Operations

Morris County and the Wharton area has been an iron mining district since the early 1700's. The earliest known use of the Site was as an iron forge, termed the "Washington Forge." The Washington Forge was built in about 1795 and probably used iron ore from deposits in and around the Wharton area. Economically viable iron deposits were discovered at the Site, subsequently Site operations changed from forging to underground iron mining. According to a New Jersey Department of Labor publication (NJDOL, 1989), the Washington Forge Mine and West Mount Pleasant Mine are located "in the LEC lot." The NJDOL report states that the Washington Forge Mine opened in 1868 with the construction of two inclined shafts 20 feet apart on the grounds of the old forge.

The mine was worked until 1875 when it was closed because of the difficulty in handling groundwater seepage into the mine (Bayley, 1910). The mine reportedly opened again in 1879 after a drainage tunnel to the Orchard mine was completed. The Orchard mine was located south across the Rockaway River from the Site. The Washington Forge mine was permanently abandoned in 1881. The West Mt. Pleasant Mine connects with the Washington Forge Mine with an inclined access shaft located about 170 feet northeast of the southern-most Washington Forge mineshaft. The iron forge and mining history above shows that transportation of iron ores from various locations in Morris County onto the LEC property occurred over a period of at least 86 years (1795–1881). Much of the fill materials found on-site was derived from these iron mining operations.

1.3.2 Vinyl Manufacturing

The LEC facility was involved in the production of vinyl wall coverings from 1943 to 1987. The making of vinyl wall coverings involves several manufacturing processes that were carried out in the various buildings comprising the Site. The first step in the process is referred to as lamination. Lamination involves the bonding of fabric to the vinyl film using a plastisol adhesive in conjunction with heat and pressure. The fabric/film laminate is then coated with a plastisol compound in order to texturize the material in preparation for printing. The printing process involves the application of decorative print patterns and/or protective topcoat finishes. When printing is completed, the product is inspected and packaged for shipment to the consumer.

The manufacturing process involved the generation of liquid waste solvents including Xylene and methyl ethyl ketone, waste pigments, and the generation of condensate from fume condensers. Additionally, airborne particulate matter was collected via a dust collector. Non-contact cooling water was discharged into the Rockaway River under a New Jersey Pollution Discharge Elimination System Permit. From 1963 until 1970 LEC disposed of its wastes, including a polyvinyl chloride (PVC) waste material into an unlined on-site impoundment. The facility was originally heated by coal and later converted to #6 fuel oil.

Former vinyl manufacturing operations west of the rails-to-trails area including raw material storage, drum storage and printing occurred in Building 9. The lamination process was performed in Building 8 located directly to the east of Building 9.

Active manufacturing of vinyl wall coverings ceased at the Site in 1987. Since that time the portion of the Site east of the pedestrian trail (former railroad crossing) has been inactive except for remedial, investigative, and monitoring related activities. Access is currently restricted to the area east of the pedestrian trail by a locked gate and an 8-foot high chain-link fence. Some of the buildings west of the pedestrian trail have been subleased as commercial or retail space.

Section 2
Regulatory Oversight and Compliance

2.1 Lead Agency

In the USEPA letter to the NJDEP dated, April 18, 2008, USEPA outlined their intent to assume the role of lead regulatory agency at the Site. In their letter to LEC dated July 30, 2008, USEPA proposed the negotiation of a Draft Administrative Agreement and Order on Consent and associated SOW for LEC to continue financing and conducting Site investigative and remedial actions under USEPA direction. During negotiations, both LEC and USEPA agreed that ongoing work under the direction of USEPA would best be managed through a UAO and associated SOW. The new UAO and SOW for the Site became effective August 6, 2009, and are presented in Appendix A. Copies of other regulatory correspondence and reports discussed in this Section are presented in Appendix B.

2.2 UAO and SOW Compliance

A check list of UAO and SOW specific action items for the Site is presented in Table 1. As shown on Table 1, the following items are deemed complete:

- LEC's Notice of Intent to Comply (Section VII #34 of the UAO) was provided August 13, 2009 (Table 1 Action Item #2).
- Notice that RMT, Inc. (RMT) would serve as Supervising Contractor and a copy of RMT's Quality Management Plan (QMP) were provided on August 10, 2009 (Section IX #40 of the UAO and Section IIIA of the SOW) (Table 1 Action Items #5).
- Notice that Karen C. Saucier, PhD, located in RMT's Greenville, South Carolina office, would serve as Project Coordinator (Section IX #41 of the UAO and Section IIIB of the SOW) (Table 1 Action Item #'6).
- Notice of a name change for the firm of the Project Coordinator and Supervising Contractor to TRC Environmental Corporation (TRC) on the basis of an acquisition of the RMT Environmental Business Unit by TRC effective June 6, 2011. (Table 1 Action Items #6).

Completion of the UAO and SOW specific action items outlined in Table 1 will continue to be documented as the project progresses. TRC will provide copies of the updated check list of UAO and SOW specific action items in accordance with the Section XVIII of the UAO following the completion of each future action item.

2.3 Roles and Responsibilities

A comprehensive list of project contacts and their roles and responsibilities is presented in Table 2.

2.4 UAO Reporting Requirements

As required by the UAO, all reporting requirements moving forward will be in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA). As shown in the following sections, and as agreed during UAO and SOW negotiation, “Remedial Design” addenda are not required for the Site. The NJDEP approved the RA Work Plan Addendum for proposed investigation/remedial action, and documentation of remedial action in addition to the NJDEP approved Remedial Action Report (RA Report) was considered more efficient.

2.4.1 RA Work Plan Addendum

This Addendum to the NJDEP approved Remedial Action Work Plan for Source Reduction (RMT, 2004) (herein the “RA Work Plan Addendum”) combines the Remedial Investigation Work Plan (RIW) for the MW-30 area (Ref. Section 4.1), and the Remedial Action Section Report (RASR) and RIW for the MW19HS1 area (Ref. Section 4.2). This RA Work Plan Addendum has been prepared in accordance with guidance on remedial work plans as described in 40, Code of Federal Register (*CFR)* Pt. 300, National Oil and Hazardous Substances Pollution Contingency Plan (NCP), and the USEPA 1995 *Remedial Design/Remedial Action (RD/RA) Handbook*, Publication 9355.0-4B, Washington, D.C. Preparation and submittal of this RA Work Plan Addendum satisfies Section IVB of the SOW and is shown as complete on Table 1 (Item #10).

2.4.2 Final RA Work Plan Addendum

As further discussed in Section 4, two residual sources (soil) AOCs exist at the Site: 1) the MW-30 area, and 2) the MW19HS1 area. Each of these AOCs contain soil contamination that acts as a continuing source of shallow groundwater contamination, and subsequently requires excavation and off-site disposal in compliance with 1994 ROD and 2007 ESD. Given the current nature and extent data specific to each residual source AOC, TRC anticipates completion of the soil remedy in the MW19HS1 area before the MW-30 area. Documentation of additional MW-30 remedial investigation beyond that proposed in this RA Work Plan Addendum (if required), along with a proposed remedy for the MW-30 area will be presented in the form of a Final RA Work Plan Addendum.

2.4.3 RA Report Addendum

In accordance with Section E of the SOW, one Addendum to the NJDEP approved Remedial Action Report (RMT, 2005) will be prepared and submitted following completion of the soil remedy for <u>both</u> the MW-30 and MW19HS1 residual source AOCs.

2.4.4 Monthly Progress Reports

As required by Section XV of the UAO, all actions undertaken during the design, preparation, and implementation of the UAO and SOW will be summarized in monthly Progress Reports and submitted electronically (pdf format) on or before the 10^{th} day of each month following the UAO and SOW effective date.

2.4.5 EDDs and Laboratory Reports

All Electronic Data Deliverables (EDDs) will be provided in both USEPA format and NJDEP format (Hazsite), and included on CD ROMs specific to each report. Electronic copies of all reports will be included in pdf format on a CD ROM specific to each report. Electronic copies (in pdf format) of laboratory analytical reports specific to a report will be included as a separate file.

TRC will provide copies of all UAO and SOW required deliverables in accordance with the Section XVIII of the UAO.

Section 3
AOCs, COCs and Performance Standards

As outlined in Section IA of the SOW, there are three (3) remaining AOCs at the Site. The MW-30 and MW19HS1 areas contain residual source soils at concentrations above applicable soil cleanup criteria that act as continuing sources of shallow groundwater contamination. The third AOC is Site wide shallow groundwater impacted above applicable groundwater quality criteria.

3.1 Site AOCs

Remedial investigation and monitoring within the MW-30 and MW19HS1 areas has been ongoing for several years in accordance with the both the Post Remedial Monitoring Plan (PRMP) (RMT, October 2005), and the Monitored Natural Attenuation (MNA) Work Plan (RMT, 2001, as revised 2001, 2005, 2006, 2007 and 2009). The nature and extent of the residual source material within the MW19HS1 area is generally understood; however further delineation within the MW-30 area is required in order to design a viable 1994 ROD compliant soil remedy. The scope of work outlined in this RA Work Plan Addendum varies in nature between each residual source AOC. The MW19HS1 scope of work is remedial based and proposes implementation of the soil remedy for this area in compliance with the 1994 ROD and 2007 ESD, whereas the MW-30 scope of work is investigative in nature as required to obtain remaining nature and extent data needed to design a compliant soil remedy.

Quarterly Site wide groundwater and surface water monitoring for COCs and natural attenuation (NA) parameters is ongoing. COCs within the MW19HS1 area are limited to on-site areas, and data continues to show that intrinsic bioremediation processes are strong and actively working to break down COCs related to residual soil contamination. COCs within the MW-30 area have migrated off-site (east) into the Air Products drainage ditch and the Wharton Enterprises wetlands. The MW-30 and MW19HS1 AOCs, as well as quarterly groundwater and surface water monitoring locations, are shown on Figure 2**.**

3.2 COCs and Performance Standards

Site COCs and their associated media are:

- Benzene, Toluene, Ethylbenzene, Xylene (BTEX): Soil, Groundwater, Surface Water and Sediments
- bis (2-ethylhexyl) phthalate (DEHP): Soil, Groundwater, Surface Water and Sediments
- Lead: Groundwater and Sediments

As required by Section II of the SOW, all remedial work planning and action conducted at the Site will be performed in compliance with current regulations and performance standards, cleanup objectives, and applicable and relevant and appropriate requirements (ARARs) set forth in the 1994 ROD and 2007 ESD.

Site performance standards are as follows:

- Soil: N.J.A.C 7:26D, Appendix I, Table 1B, Non Residential Direct Contact Soil Health Based Criteria and Soil Remediation Standards
- Groundwater: N.J.A.C. 7:9C-1.7(c) and (d), Appendix Table 1, Class II A Groundwater Quality Criteria
- Surface Water: N.J.A.C 7:9B-1.15 (e), Table 3 (Category 1 FW2-TM(C1)) (Rockaway River), N.J.A.C. 7:9B-1.4, "Category one waters" means those waters designated in the tables in N.J.A.C. 7:9B-1.15(c) through (g), for purposes of implementing the antidegradation policies set forth at N.J.A.C. 7:9B-1.5(d), for protection from measurable changes in water quality based on exceptional ecological significance, exceptional recreational significance, exceptional water supply significance, or exceptional fisheries resource(s) to protect their aesthetic value (color, clarity, scenic setting) and ecological integrity (habitat, water quality, and biological functions). Background concentrations are the concentrations found in upgradient sample SW-R-5, collected in the Washington Forge Pond.
- Sediments: NJ Site Remediation Program Guidance for Sediment Quality Evaluations Tables 1, 2 and 3 Sediment Screening Values.

Section 4
AOC Specific Regulatory Compliance and Path Forward Strategy

In the interim of USEPA becoming lead agency for the Site and subsequent finalization of the UAO and SOW, various work scopes were completed and reports prepared and submitted to both NJDEP and USEPA for review as a result of NJDEP oversight requirements. Specifically, a Remedial Investigation Work Plan (RIW) for the MW-30 area was prepared in accordance with the requirements outlined in N.J.A.C. 7:26E-4.2, and a RASR and RIW for the MW19HS1 area were prepared in accordance with the requirements outlined in N.J.A.C. 7:26E-5.2 and N.J.A.C. 7:26E-4.2, respectively. This section has been prepared to address and close the former AOC specific reports and regulatory comments received while NJDEP was the lead agency, and outline the overall approach moving forward. Copies of all regulatory correspondence discussed in this Section are presented in Appendix C.

4.1 MW-30 AOC

On June 25, 2008, LEC received a NJDEP Notice of Deficiency (NOD) letter dated June 19, 2008 following the Department's review of eight (8) quarterly Remedial Action Progress Reports (RAPRs) from 2Q2006 through 1Q2008. As stated in the June 19 NOD, the NJDEP required LEC to take "Corrective Action" consisting of the preparation and submittal of a RIW within 60 days after receipt of the NOD. Specifically, the RIW should propose work that would take place in order to "delineate groundwater contamination in the vicinity of MW-30s", and "identify source(s) areas that are degrading surface water quality in the ditch and the Rockaway River."

4.1.1 Response to June 19 NOD

The Description of Deficiency states that "Pursuant to Paragraph 29 of the ACO, failure to conduct additional remediation as directed and to submit subsequent Remedial Investigation Reports and Remedial Action Reports in Accordance with N.J.A.C. 7:26E as applicable." LEC disagrees with this statement. Any notion of a deficiency is in error. LEC has worked very closely with the NJDEP on all matters related to the LEC Wharton project, and has always been in full compliance with and has submitted all reports as required by the ACO. As explained during many telephone conversations and e-mails, we regularly requested NJDEP Division of Land Use Regulation (DLUR) and Bureau of Case Management to review and expedite issuance of the requisite wetland and stream encroachment permits in order to complete the Post Remediation Monitoring Plan (PRMP) that NJDEP approved. It was critical to obtain data from all of the PRMP wells, especially the downgradient wetland wells, in order to adequately evaluate the efficacy of the Source Reduction remediation and move the project forward (see discussion in the following paragraphs for additional details and how this matter directly pertains to the content of this RA Work Plan Addendum). As described further below, the requisite permits were finally received in February 2008, and the wells were installed shortly thereafter. Based on our technical review of the data from the new wetlands wells that are now available, it was determined that the data are most pertinent to the tasks included within this addendum, and they have been duly incorporated herein. Based on these new data, the need for, and content of, this addendum is now more apparent, and the timing for its completion is appropriate, although not under the auspices of any type of "deficiency."

The June 19, 2008 NOD letter acknowledges receipt of RAPRs for each quarter of a year beginning with the 2Q06 report and the most recent being the 1Q08 report. However, the NJDEP June 19, 2008 letter does not acknowledge that the remaining wells as outlined in the NJDEP-approved PRMP were not yet installed because of the long delay in receiving the required wetland and stream encroachment permits from the NJDEP DLUR. The Land Use Regulation Program (LURP) Freshwater Wetlands Statewide General Permit No. 14 (GP-14) and Minor Modification Stream Encroachment Permit (mmSEP) applications were submitted to the DLUR on August 15, 2006 and March 26, 2007, respectively. These permits were finally approved as specified in the letter received on February 29, 2008 from the DLUR, as well as the trout maintenance time restriction waiver from DLUR and the Bureau of Freshwater Fisheries that allowed monitoring well installation between the dates of March 15th and June 15th.

As stated in the 2Q08 RAPR, the remaining monitoring wells specified in the PRMP were installed during the week of April 7, 2008. The new wells were sampled, and results were included in the 2Q08 RAPR, which was submitted to NJDEP on August 19, 2008. The data contained in the 2Q08 RAPR were used to develop some general conclusions that are summarized as follows:

- Concentrations of dissolved-phase COCs continue to decline downgradient from the main LNAPL source reduction area (data from the MW-30 well cluster), and these COCs are essentially limited in vertical depth to just below the bottom of the slurry monolith (specifically no more than 5 feet directly below the bottom of the monolith based on data from the MW-30 well cluster). For more information regarding the slurry monolith refer to the November 2005 Remedial Action Report Source Reduction.

- Neither BTEX nor DEHP were detected in any of the drainage ditch surface water samples during the second 2008 quarterly monitoring event, although low levels of DEHP have been occasionally detected in previous surface water samples from the drainage ditch receptor.
- Potential remaining source material appears to occur within a portion of the wetland area, and along the western edges of the drainage ditch.

4.1.2 MW-30 RIW

As required by the June 19 NOD, a RIW was prepared and submitted to both NJDEP and USEPA for review in August 2008. Regulatory comments following RIW review were received from USEPA and the NJDEP on January 22, 2009 and January 30, 2009, respectively. Detailed responses to both the USEPA and NJDEP comment letters are presented in Appendix D. As shown in Appendix D, both USEPA's and the NJDEP's comments are reproduced, followed by RMT's responses describing the changes that were made to this RA Work Plan Addendum, and the locations in this RA Work Plan Addendum where the comments were addressed.

4.2 MW19HS1 AOC

The MW19HS1 AOC, located at the northwest corner of the Site (Figure 2), has been under investigation, remediation, and monitoring since impact was discovered following the removal of two underground storage tanks (USTs) in 1990. An NJDEP NOD dated June 20, 2007 following review of the May 2006 Soil Gas Investigation suggested the presence of a "...residual long term source of dissolved BTEX contamination", and required the development and submittal of a RASR. In accordance with the submittal extension granted by NJDEP, a RASR was submitted for review in September 2007. An NJDEP NOD dated October 16, 2008 generally agreed with the remedial approach outlined in the RASR but required the submittal of a RIW as the full vertical and lateral extent of contamination in this AOC was not yet understood. A RIW proposing further delineation was prepared and submitted for review in November 2008.

No formal comments on the November 2008 RIW were received, however; conversations with USEPA suggested combining the remedial investigation outlined in the RIW and remediation outlined in the RASR into one mobilization. RMT, on behalf of LEC, submitted a Letter of Intent (LOI) dated January 5, 2009 concurring with this approach. As outlined in the 2009 LOI and this addendum, the MW19HS1 area soil remedy is excavation and restoration, in compliance with the 1994 ROD and 2007 ESD. *In-situ* chemical oxidation (polishing), as originally proposed in the RASR, will not occur while the excavation is open as this would require an Amendment to the 1994 ROD.

4.3 Path Forward Strategy

As per discussions with the USEPA, in lieu of the pending UAO and SOW, and future reporting and review requirements, the MW-30 RIW and associated regulatory comments, and the MW19HS1 RIW and RASR and associated regulatory comments, would be combined into an addendum to the NJDEP approved 2004 RA Work Plan for Source Reduction, and submitted to the USEPA for approval. The approach outlined in the 2004 RA Work Plan was approved by NJDEP as being in compliance with the 1994 ROD soil remedy. After the work plan implementation occurred in 2005, USEPA issued the 2007 ESD closing out all Site soil AOCs with the exception of those soils associated with the MW19HS1 and MW-30 areas.

Conversations with USEPA also confirmed that the “Remedial Design” report for the Site soil remedy was recorded as complete based on the development, negotiation, and approval of the report entitled Findings & Recommendations Regarding a Conceptual Free Product Remediation Strategy (RMT, 2002). Subsequently, as outlined in Section 2.4, future addenda to this “Remedial Design” report will not occur. Documentation of soil remedy work plans and implementation projects will occur via RA Work Plan and RA Report addenda moving forward (Ref. Sections 2.4.1, 2.4.2, and 2.4.3)

Section 5
AOC Investigative and Remedial Background

5.1 MW-30 Area

Copies of all regulatory correspondence mentioned in this section pertaining to the 2004 RA Work Plan, the 2005 RA Report and the 2007 ESD are provided in Appendix E.

5.1.1 RI/FS and the 1994 ROD

RI/FS investigations were performed on behalf of LEC by Roy F. Weston, Inc. (WESTON) and GeoEngineering, Inc. (GEI) from 1986 to 1992. In April 1994, NJDEP issued a Superfund ROD for the Site. The ROD summarizes the results of the RI/FS, the baseline risk assessment, and outlined feasible remedial alternatives. The selected remedy for the Site was termed **"Ground Water Treatment with Re-infiltration /Soil Bioremediation – ROD Alternative No. 4"** and included the following components:

1. Floating product/groundwater extraction system installation and operation.
2. Remediation via biological treatment of extracted ground water.
3. Excavation and consolidation of bis (2-ethylhexyl) phthalate contaminated soils into a soil treatment zone.
4. Re-infiltration of a portion of treated groundwater (with added oxygen and nutrients) into the unsaturated soil treatment zone via perforated piping to allow *in situ* bioremediation of contaminated soils.
5. Recirculation of a larger portion of the treated groundwater within the capture zone.
6. Remaining treated ground water to be discharged into a deeper aquifer in accordance with groundwater discharge criteria.
7. Provide vegetative soil cover for the area of the groundwater infiltration system.
8. Spot excavation and disposal of soils containing polychlorinated biphenols (PCBs), lead and antimony, where levels exceed the soil cleanup levels in locations other than the east soils area designated as the disposal area.
9. Excavation of disposal area sludges/fill which may inhibit *in situ* treatment.
10. Environmental use restrictions on property.

5.1.2 On-Site Soil Hot Spots

As outlined in the document entitled *Workplan for Phase I ROD Implementation* (Roy F. Weston, October 1994), a total of eleven (11) “Hot Spots,” were identified during the

RI/FS process as areas exhibiting either inorganic or organic contaminant concentrations in soil in excess of ROD cleanup criteria. Of the 11 hot spots identified in the RI/FS, eight (8) were located on the eastern half of the Site (east of the rails-to-trails path). Four of these (Hot Spots B, C, D, and E or "the waste disposal area" (WDA)) were identified as hotspots associated with inorganic impacted soils. Hot Spots 3, 4, 5 and 6 were associated with soils impacted by organic compounds. As outlined in Table 1-1 of the report entitled *Quarterly Monitoring Report – L. E. Carpenter Site* (Roy F. Weston, April 1995), Hot Spots D, E, 3, 5, and 6 were excavated and closed as part of Phase I Remedial Actions.

Inorganic Hot Spots B & C

RMT outlined a scope of work in the document entitled *Revised Workplan for Delineating and Characterizing Elevated Lead Concentrations in Soil* (RMT, May 2001). The scope of work outlined in this workplan was specifically designed to (1) fully delineate the horizontal and vertical extent of lead concentrations in the soil and groundwater, (2) determine the potential source(s) of the elevated on-site lead concentrations, and (3) provide data necessary to fill data-gaps that may exist in the WESTON human health risk assessment. This scope of work was approved by NJDEP and USEPA in the NJDEP letter dated August 23, 2001 and subsequently implemented on-site between November 5 and 14, 2001. The results of this investigation were outlined in the document entitled *Nature and Extent of Lead in Soils and Groundwater - Volumes I & II* (RMT, March 2002).

The results of the November 2001 investigation showed that Site wide elevated lead concentrations are predominantly a result of historical manufacturing operations, and that lead occurred in two major forms within two distinct types of fill material:

- Lead associated with light- to brightly-colored process waste is likely from a release of potential vinyl stabilizer compounds such as lead phthalate or lead stearate.
- Lead associated with dark-colored forging and mining era fill material is likely from a release of potential vinyl pigmenting compounds, such as lead chromate.

The on-site lead soils that were found to exhibit a concentration of 400 mg/kg (the USEPA residential remedial action goal) or greater were excavated and disposed of off-site as part of the source reduction activities that took place in the first half of 2005 (Ref. to Section 4.1 of the Remedial Action Report (RAR)).

Organic Hot Spot 4

Process waste associated with historical operations conducted in former Building 14 was identified during the November 2001 lead investigation. The location and extent of the process waste as shown on Figure 12 of the report entitled *Findings and Recommendations Regarding a Conceptual Free-Product Remediation Strategy* (RMT, March 2002) encompasses historic Hot Spot 4. In addition, the discovery of the process waste material at the GPC-15 sample location detailed in the report entitled *Hot Spot B and Hot Spot C Subsurface Lead Investigation* (RMT, August 1999) geographically correlates with the historic Hot Spot 4 location and the location of process waste discovered during the 2001 investigations.

Even though Hot Spot 4 was originally classified in the RI/FS as an organic hot spot, the process waste located in this area on-site contains both organic and inorganic constituents. These materials, process waste and surrounding soils (approximately 450 tons) were excavated and disposed of off-site as hazardous waste as part of the source reduction project. The excavation and off-site disposal of this material is outlined in Section 4.2 of the November 2005 RAR.

5.1.3 2004 RA Work Plan and the 2005 Source Reduction Remedial Action

Successful execution of the remedial scope outlined in the 2004 RA Work Plan required the completion of numerous Site preparation tasks prior to the initiation of soil excavation activities:

– Numerous monitoring wells, well points, and free product wells (2004 RA Work Plan, Table 7) were abandoned in accordance with N.J.A.C. 7:9D-3.1(g)(2) between the dates of November 29 and December 9, 2004. These activities and associated well abandonment forms were documented in the report entitled Quarterly Monitoring Report – 1st Quarter 2005 (RMT, March 2005).

– Vertical delineation of smear zone [AEC C-1] activities took place in November and December 2004 and was documented in the report entitled Pre-Construction Boring Report (RMT, January 2005).

– Two existing out-building structures identified as treatment buildings used to house the former pneumatic free product extraction system operated by Roy F. Weston (Weston) until 1996 were demolished, Site security measures were implemented, and temporary erosion control measures were installed.

The source reduction remedial action took place between January 1, 2005 and June 30, 2005. During this time, the various areas of environmental concern (AEC) identified in the 2004 RAWP were remedied. The remediation goals for the source reduction included the removal of:

- all soils impacted by lead with concentrations greater than 400 ppm
- all process-waste impacted soils with concentrations greater than 400 ppm lead and 600 ppm copper
- all PCB-impacted soils with concentrations greater than 2 ppm
- as much residual Xylene, Ethylbenzene and DEHP in the soil (saturated and unsaturated) as practicable in an effort to eliminate the occurrence of measurable free-phase product

On-site remedial construction activities sequentially removed and managed each AEC based on differing levels of contaminant impact, waste disposal classification, and superposition of the various layers or contaminated zones. These data were derived from the results of previous lead and free-product investigations, the results of the December 2004 preconstruction boring activities, and the results of the November and December 2004 PCB delineation activities.

AEC removal sequencing was limited by the superposition of the various layers or contaminated zones. Each AEC was remediated following the general removal hierarchy outlined below:

1. Lead Impacted Soils – AECs A-1, A-2 and A-3 (January and February 2005, 9,292 tons)
2. Process Waste Areas – AECs B-1 and B-2 (February and March 2005, 450 tons)
3. PCB Impacted Soils – AEC PA (March and April 2005, 2,727 tons)
4. Clean Soils – (February and March 2005)
5. Smear Zone Soils – AEC C-1 (March, April, and May 2005, 34,052 tons)

5.1.4 2005 RA Report

Following implementation of the Source Reduction remediation in 2005, a RAR was prepared and submitted to NJDEP and USEPA on November 18, 2005. The RAR was reviewed and approved by USEPA and NJDEP on September 14, 2007.

5.1.5 2007 Explanation of Significant Differences (ESD)

An ESD was granted for all of the "hot spot" soils on-site, including soils contaminated with lead, PCBs, process waste, and LNAPL free-product within the smear-zone associated with the groundwater table. The exceptions listed in the ESD included the MW19HS1 area, and the component of the ROD which relates to the groundwater portion of the initial ROD remedy.

The ESD was attached to USEPA's letter to NJDEP dated October 24, 2007. ESD modifications to the selected remedy are as follows:

1. Floating product and associated smear zone soils were excavated and disposed of off-site as an alternative to the active removal system selected in the ROD due to the low yield of floating product extraction system previously installed;
2. DEHP-impacted soils were excavated and disposed of off-site instead of being consolidated in to a soil treatment zone;
3. No re-infiltration of treated groundwater will be performed for the purpose of treating soil contamination, as all contaminated Site soils were excavated to meet cleanup standards and disposed of off-site;
4. Following implementation of the source reduction remediation, all disturbed areas were restored to proposed final grades with a vegetative soil cover. The ROD selected a vegetative cover over the area of groundwater infiltration;
5. Excavation and off-site disposal of soils containing PCBs and lead were completed to meet the more stringent New Jersey Residential Direct Contact Soil Cleanup Criteria (RDCSCC) (0.39 ppm and 400 ppm, respectively) instead of the Non-Residential Direct Contact Soil Cleanup Criteria (NRDCSCC) (2.0 ppm and 600 ppm, respectively) as required in the ROD;
6. All soils above site-established cleanup levels were excavated and disposed of off-site during the source reduction remediation, instead of the excavation of some soils and on-site treatment through flushing of other soils as selected in the ROD;
7. Environmental use restrictions on the property as selected in the ROD are no longer needed since RDCSCC were met for PCBs and lead at the Site.
8. It should be noted that while most of the Site soils were excavated to levels below the water table thereby removing all contaminants, there is a limited area of soils in the southwest corner of the Site, called the B-2 area, where soils were excavated to a depth of 2 feet and the excavation was then backfilled with clean fill. Two post-excavation samples collected at the base of this excavation in this area exceeded the NJDEP residential soils cleanup goal for antimony of 14 ppm. The concentrations of antimony collected at the base of the excavation are well below the NJDEP non-residential cleanup goal, and are covered with two feet of clean soil. Based on a review of all post-excavation samples of this limited area, USEPA and NJDEP have determined that the concentrations of antimony detected during post-excavation sampling event do not warrant environmental use restrictions on the property. A detailed evaluation of this issue is available for review in the Site files.
9. Also, it should be noted that the ESD does not address any changes to component 2 of the ROD which relates to the groundwater portion of the remedy. Therefore, the ESD does not address any changes to the groundwater pump and treat system as required by the ROD. The purpose of the pump and treat system as is to address the residual groundwater contamination after the floating product areas have been remediated. The pump and treat component of the remedy is currently being reevaluated. NJDEP and USEPA reviews of the groundwater data indicate the potential for Monitored Natural Attenuation (MNA) to be an appropriate groundwater remedy for a portion of the groundwater contamination. In January

2005, LEC began to implement an MNA work plan to collect the required data to determine if MNA will be an effective remedy for this Site. NJDEP and USEPA will evaluate the results of this ongoing MNA investigation and will determine, in the future, if MNA is the appropriate remedy for this Site. In addition, further investigations are ongoing to further evaluate an area of BTEX contamination within the MW-19 area. [NOTE: Although natural attenuation of BTEX constituents has been shown to be strong around the periphery of a stable dissolved phase plume that is not migrating off-site, residual source material was discovered to still exist under the northwestern corner of Building 9, which could provide contaminant mass for this small area for many years to come. Therefore, an alternate accelerated remedy has been proposed in the September 2007 RASR for this area].

5.2 Shallow Groundwater AOC

5.2.1 Post Remedial Routine Monitoring Program (PRMP)

Discussions were initiated by LEC and RMT with both NJDEP and USEPA during the fourth quarter of 2005 (4Q05) regarding the development and installation of the post source reduction Site monitoring network in accordance with the submitted PRMP. A formal regulatory review and comment letter regarding the PRMP was received by LEC on February 22, 2006. RMT prepared a response to the February 22, 2006 NJDEP comments in Section 1 of the 1Q06 RAPR dated May 9, 2006. NJDEP approved the 1Q06 RAPR including response to the PRMP comments in their letter dated March 30, 2007.

RMT, on behalf of LEC, began installing the PRMP monitoring well network within the source area on June 5, 2006. RMT and LEC submitted the necessary GP-14 permit application to the NJDEP DLUR on August 14, 2006 requesting authorization to install the remaining five monitoring wells (*i.e.*, monitoring devices) in the wetland area located east of the Site (Wharton Enterprise property). In February 2007, RMT was notified during follow up conversations regarding approval of the GP-14 application that a modification to the existing Stream Encroachment Permit (1439-04-0001.1 FHA040001 SEP) would be required in order to allow the placement of fill material in the 100-year floodplain. This fill material is required because the remaining five monitoring wells had to be installed through mounds to facilitate screening the shallow water table with a properly constructed well. RMT submitted the requested SEP modification to NJDEP DLUR on March 26, 2007 to avoid further delays.

The GP-14 permit/SEP modification permits were received March 31, 2008. RMT, on behalf of LEC, formally requested a waiver from the requirements of ***GP-14 Permit Special Condition No. 1 – Prohibition of construction activities between the dates of March 15 and June 15 to protect the trout stocked water of the***

Rockaway River in a letter dated March 18, 2008. Specifically, RMT requested approval to install, construct, and restore the five (5) mounded groundwater monitoring wells as described in the GP-14 permit application dated August 15, 2006 [Revised March 22, 2007 and last revised September 7, 2007] during the week of April 7, 2008. RMT received approval of the waiver in an email from the Bureau of Freshwater Fisheries dated March 25, 2008. Therefore, on April 6, 2008, RMT mobilized to the Site to complete the PRMP well network installations. Details of the monitoring well installations and well details can be found in Section 3 of the 2Q08 RAPR.

The 2Q08 monitoring event marked the first time that all of the wells specified in the PRMP were sampled. The 2Q08 sampling event is the ninth event for the source area monitoring wells installed in June 2006. This period of time since sampling and testing the 2006 wells began was a result of the more than two year period of time it took for the New Jersey DLUR to approve the GP-14 and Stream Encroachment Permit applications.

As outlined in the PRMP, the following monitoring activities are conducted on a quarterly basis:

- Static water level measurements are collected from thirty-nine (39) groundwater monitoring well locations and twelve (12) surface water (Rockaway River and drainage ditch) locations using an electronic water level indicator.
- Grab samples are collected from the five (5) drainage ditch and seven (7) Rockaway River surface water sample locations. Surface water samples are analyzed for BTEX and DEHP only.
- Low flow sampling is conducted at twenty (20) monitoring wells. Groundwater samples are analyzed for BTEX, DEHP, and MNA parameters (*field*: DO, pH, ORP, conductivity, turbidity, temperature, ferrous iron, alkalinity, and carbon dioxide; *laboratory*: heterotrophic plate count, TSS, TDS, nitrate nitrogen, ammonia nitrogen, total phosphorus, sulfate, methane and dissolved lead).
- Analytical data tables (*e.g.*, field and lab data), a Site wide potentiometric surface drawing, various trend charts and drawings are generated as required based on data received throughout the years of monitoring. In addition, text describing procedures, methods, results and recommendations for each sampling event are also generated.
- Quarterly monitoring reports are prepared and submitted, as required by the 1986 ACO (now the UAO) to both USEPA and NJDEP, on or before the last day of the month following the reportable quarter (*i.e.*, 1Q08 = April 30, 2008).

5.3 MW-19HS1 Area

The 1986 ACO defines the Site as Block 301, Lot 1 and Block 801, Lot 3 within the Borough of Wharton. The MW19HS1 area is located within Block 301, Lot 1 and is immediately west of former Building 9 in the northwest corner of the Site. This AOC is associated with two former

10,000-gallon underground storage tanks (UST E-3 and UST E-4 and associated piping), which reportedly contained waste methyl ethyl ketone (MEK) and pigments, and MEK respectively.

5.3.1 Soil and Groundwater Investigation and Remediation ~ 1990 through 2005

In 1989, four (4) test pits (TP-63 to TP-66) were excavated around the two USTs. Soil samples were collected from immediately above the water table (between 7 feet and 9 feet bgs) and analyzed for volatile organic compounds (VOCs), base neutral organics (BNO), and priority pollutant metals. No VOCs were detected above quantification limits and residual concentrations of cadmium were detected in TP-63. However, test pit sample results did identify elevated concentrations of DEHP. Subsequently, DEHP was identified as a primary MW19HS1 area COC.

USTs E-3 and E-4 and visually impacted soil surrounding the USTs were removed from the Site in 1991. A detailed account of Site UST removal activities is presented in the *Final Technical Report for Tank Removal Operations* (WESTON, September 1991). In 1991, after tank removal activities had been completed, WESTON installed groundwater monitoring well MW-19 in the area immediately adjacent to the excavation to determine whether groundwater had been impacted by previous operations conducted at the facility. The results of the groundwater sampling activities conducted at that time did not identify the presence of VOCs at concentrations above the method detection limits with the exception of 2-Butanone (MEK).

RI activities and subsequent remedial feasibility evaluations continued at the Site until 1992. Following completion of the RRI/FS, NJDEP issued the ROD for the Site in 1994. As outlined in chosen ROD alternative No. 4, “Hot Spot” soil excavation was the chosen remedy for the MW19HS1 AOC. Subsequently, a Workplan for Phase I ROD Implementation was prepared in October 1994 and approved by NJDEP for field implementation.

Based on a review of the report entitled *Second Quarter Progress Report* (WESTON, August 1996), on November 30, 1994, WESTON began the excavation of DEHP impacted soils in the MW19HS1 AOC. Four (4) additional step-out excavation events were conducted on December 6th, 12th, 16th and 20th 1994 as post excavation side wall sampling continued to show elevated concentrations of DEHP above the Site cleanup objective of 100 mg/kg. On December 12, 1994, further excavation south was stopped within 5 ft of monitoring well MW-19 (presumably to avoid destruction of the well), and within 6 ft of former Building 9 to a total depth of 9 ft bgs to avoid potentially undermining the building’s foundation. The final size of the excavation (as of the December 20, 1994 excavation event) was reportedly 70 feet long, ranged from 16 to 33 feet in width, and had an average depth of 9 feet below grade. Approximately 190 cubic yards of soil were removed from the excavation in 4Q94.

As shown on Figure 2-6 in the 2Q96 Progress Report, one side wall sample collected December 12, 1994 located on the south side of the excavation (HS1-PES-30) showed a DEHP concentration (140 mg/kg) above the cleanup objective of 100 mg/kg. As a result, NJDEP required the collection of additional soil samples to further delineate the distribution of DEHP in soils. In addition, NJDEP also required evaluation of VOCs in soils within the MW19HS1 area. These samples (B-1 through B-6) were collected in May 1996. No VOCs were detected above cleanup objectives in any of the eleven soil sampled analyzed. DEHP was detected in all eleven soil samples; however, samples collected at depths within the vadose (unsaturated) zone were all below the cleanup objective. Deeper samples collected at depths that correspond to below the water table exhibited concentrations above the cleanup objective. Subsequently, the presence of DEHP in soils in the MW19HS1 was related to fluctuations in the water table. No further soil excavation was recommended in the 2Q96 Progress Report, or has been performed to date.

Quarterly groundwater sampling events conducted at MW-19 by WESTON during first and second quarter 1995 identified the presence of BTEX, in addition to MEK, at concentrations exceeding the NJGWQS stipulated in the ROD. In October 1996, WESTON submitted a delineation plan to the NJDEP to further define the extent of VOC impact to groundwater and further delineate both VOC and DEHP impact to saturated and vadose zone soils in the MW19HS1 AOC. Temporary monitoring wells were installed and sampled and soil samples were collected and analyzed. The results of chemical analyses performed on the groundwater samples collected from the temporary monitoring wells identified the presence of VOCs at concentrations similar to those identified in monitoring well MW-19 in 1995. Additionally, the soil samples collected at both borings B-3 and B-2A indicated DEHP concentrations of 790 mg/kg and 220 mg/kg respectively, exceeding the “Impact to Groundwater Soil Cleanup Objective” of 100 mg/kg outlined in the 1994 ROD.

RMT received approval of an additional MW19HS1 area groundwater delineation plan in January 1998. Subsequently, in February 1998, RMT conducted a subsurface investigation that included the installation and sampling of an additional five (5) groundwater monitoring wells (MW19-1 through MW-19-5). VOC concentrations exceeding the NJGWQS were identified at MW19-1 (center of the plume), MW19-2, MW-19 and at MW19-5. However, when compared to the VOC concentrations found during WESTON’s 1996 sampling (BW-1 through BW-9), significant reductions in the concentrations of VOCs were found at monitoring wells MW19 and MW19-2. Since no remedial action had been performed (other than the 1994 soils excavation), it was concluded that natural attenuation of the volatile groundwater contaminants (toluene, Ethylbenzene, and Xylene) was likely occurring. Groundwater samples were also analyzed for the presence of DEHP. DEHP concentrations exceeding NJGWQS were found at MW19-1 (center of the plume) and at MW19-5 (downgradient well).

The NJDEP letter dated July 15, 1998 required LEC to further delineate the downgradient extent of BTEX and DEHP impact to groundwater in the MW19HS1 AOC and establish a clean zone for both parameters per the Technical Requirements for Site Remediation (N.J.A.C. 7:26E-4.4). RMT, on behalf of LEC, prepared an investigation workplan and submitted it to the NJDEP in November 1998. Per discussions and correspondence with the NJDEP (December 21, 1998), RMT was authorized to perform a groundwater screening investigation utilizing Hydropunch® or other similar methodology.

Off-site Hydropunch® sampling activities were performed on April 21, 1999. Significant difficulties advancing the Hydropunch® tool in the approved off-site locations were encountered due to the localized geology (large cobbles and boulders) seen at the Site. A total of twenty-four (24) advancement attempts were made, four (4) of which (HP-1 through HP-4) penetrated the water table. Results of the Hydropunch® investigation are documented in the report entitled *MW-19/Hot Spot 1 Off-Site Subsurface Investigation* (RMT, June 1999). Analytical results obtained from groundwater samples collected from the four (4) Hydropunch® locations did not reveal concentrations of either BTEX or DEHP above Site specific cleanup criteria. This suggested that no off-site migration of contaminants of concern was occurring.

5.3.2 Soil Gas Investigation and Vapor Intrusion

In the comment letter regarding the 3rd Quarter 2005 Monitoring Report dated December 27, 2005, the NJDEP indicated concern over the high level of toluene detected in MW-19-5. In their letter, the NJDEP claimed free product must be present and requested a vapor intrusion evaluation be performed on both the north and south sides of Ross St. in accordance with the new NJDEP Vapor Intrusion Guidance Document dated October 2005, and updated March 2006.

RMT responded to the December 27, 2005 letter in the 4th Quarter Groundwater Monitoring Report dated February 2006. In that response, RMT pointed out that, according to the NJDEP's Vapor Intrusion (VI) Guidance Document (October 2005), a VI evaluation must be completed if a receptor is within 30 feet of a BTEX plume (or within 100 feet if product is present). RMT noted that the Site currently has no free product as demonstrated by oil-water interface probes in the most contaminated monitoring wells within the MW19HS1 AOC (*i.e.*, MW-19, MW-19-5, and MW-19-7) none of which have ever generated any measurable free product. The lack of free product is also evidenced by the fact that all individual BTEX concentrations are well below each parameter's solubility limit. However, part of format Building 9 (Figure 9) lay within 30 feet of the area with residual soil and groundwater contamination; and therefore, a soil vapor intrusion evaluation work plan was submitted in Section 4.4 of the 4th Quarter 2005 Quarterly Groundwater Monitoring Report.

The VI work plan was discussed with and approved by NJDEP during the conference call held on February 22, 2006. NJDEP formalized their approval to proceed with the scope of work outlined in the workplan in an email sent the same day. The soil gas investigation was performed on March 1 and 2, 2006. This investigation was documented in the report entitled *Soil Gas Investigation in the MW19/Hot Spot 1 Area L.E. Carpenter & Company Borough of Wharton* (RMT, May 2006).

Detectable soil gas constituents were collocated with the dissolved-phase concentrations in groundwater. Based on the groundwater hydraulics, and given Darcy's mathematical law governing groundwater flow, RMT concluded that groundwater with dissolved-phase concentrations of COCs cannot migrate directly north across Ross Street and therefore does not pose a risk to the Ross Street residences. The lack of risk from direct northward groundwater migration is also further substantiated by the lack of detectable COCs in both MW-19D and MW-19-8. However, as described in previous monitoring reports, the current groundwater flow direction suggested that the leading edge of the dissolved COCs in groundwater may have been migrating northeasterly towards an empty lot adjacent to a Ross Street residence. To investigate this potential occurrence, RMT installed an additional well (MW-19-12) in 2Q06 (June 2006), as proposed in the approved PRMP. The well has never exhibited any detectable concentrations of COCs. Based on these and historic data, RMT did not recommend active remediation be considered for this area as natural attenuation processes are very strong, and all data indicates that no risk of exposure exists.

5.3.3 2006 Remedial Investigation and RASR

NJDEP provided comments on the May 2006 Soil Gas Investigation in their NOD letter dated June 20, 2007 (Appendix B). NJDEP was concerned that a residual source of BTEX contamination existed in the MW19HS1 AOC due to the high dissolved phase concentrations remaining in groundwater 15 years after initial source removal actions occurred (*i.e.*, UST and piping removal and remedial excavation), and subsequently required LEC to prepare and submit a RASR within 30 days following receipt of the letter. RMT responded with a 45-Day extension request for RASR submittal in the letter dated July 17, 2007. The 45-Day RASR extension was approved by NJDEP as outlined in their emailed letter dated July 27, 2007. The RASR was prepared to satisfy the requirements of the June 20, 2007 NJDEP NOD letter, and to document new remedial investigation subsurface data, while meeting the submittal deadline of September 4, 2007.

RMT conducted the remedial investigation between the dates of August 14 and 17, 2007. RMT advanced a total of nine (9) soil borings (SB-07-01 through SB-07-09 (Ref. Figure 19) to further evaluate and define the nature and extent of potential residual contamination acting as a continuing source of shallow groundwater impact.

Building 9 Infrastructure and Interior Boring Locations

Three (3) of the borings (SB-07-01, 02 and 03) were installed within the western interior of Building 9, into the sub slab vadose and saturated zones. These three borings were located with a bias towards the presence of former Building 9 process infrastructure relating to USTs E-3 and E-4. Specifically, two trench drains (Drain #1 and Drain #2) and associated connection piping were identified in the northwestern corner of Building 9 adjacent to the concrete loading dock (Ref. Figure 19). Drain #1 was located close to the western wall of Building 9 and formerly connected the drain system to the two exterior USTs. Drain #1 connection piping to the USTs was removed and the Drain #1 discharge hole was sealed with concrete grout during tank removal operations in 1990/1991. Evidence of a 2-foot wide concrete-filled trench (assumed to formerly house piping connecting Drains #1 and #2) was also discovered during Building 9 evaluations. This concrete-filled trench extended approximately 40-feet east from Drain #1 and connected to Drain #2 (Ref. Figure 19).

Exterior Boring Locations

The remaining six (6) boring locations (SB-07-04 through SB-07-09) were installed on the western exterior of Building 9 as shown on Figure 16. Borings SB-07-04 and 06 were installed between the soils remaining east of the former 1994 UST soil excavation (Ref. Figure 19) and the Building 9 footer. These two boring locations were also biased towards former piping runs connecting Drain #1 to USTs E-3 and E-4. Boring SB-07-08 was also installed between the soils remaining east of the former 1994 UST soil excavation and the Building 9 footer but further south (upgradient) into an area that would define a lateral clean zone based on field screening. Boring SB-07-05, -07, and -09 were installed in areas specific to the 1994 UST soil excavation lateral extents and downgradient monitoring well MW-19-5 monitoring well (Boring 09), within the former UST excavation footprint (Boring SB-07-07), and at the leading edge of the soils remaining east of the former 1994 UST soil excavation and the Building 9 loading dock (downgradient) from the trench drain system located within Building 9.

Geology and Soil Sample Results

RMT compared the soil testing results with the New Jersey Soil Cleanup Criteria. Out of the nine samples, only two, from borings SB-07-04 and SB-07-09, contained DEHP at concentrations above the applicable direct contact soil cleanup criteria. Both of these samples were collected within the saturated zone just below the water table (10 to 14 feet below the ground surface). DEHP was not detectable in groundwater from any of the wells in the MW-19 area, confirming DEHP's known characteristics for strong adsorption onto soil particles and lack of mobility within the saturated zone. Both the DEHP and Xylene detected in these two samples as well as the soil sample SB-07-01 (also from the saturated zone near the top of the water table) were at concentrations above the impact to groundwater cleanup criteria (IGWSCC). The data suggest that residual sources exist associated with both the former tanks and fill lines, but also under the building floor apparently related to the existing floor drain, which appears to have been grouted in place based on field observations.

There are significant silt and clay-rich soils in the vadose zone and upper saturated zone under former Building 9. Most of the area outside of the former building and 2 to 5 feet below the water table consists predominantly of fine to medium grained sand and sand-gravel mixtures. The preponderance of more permeable sand/gravel mixtures several feet below the water table is consistent with the geologic information for the main remediation area on the east side of the recreational trail.

The soil data were used, together with qualitative field observations, photoionization detector (PID) readings, and review of the location of the floor drains and connecting UST pipes to outline the approximate vertical distribution of residual contamination. Results indicate that residual contamination in the vadose zone is limited to the areas of initial release along the piping runs and floor drains. A smear zone at the top of the water table apparently is an ongoing "secondary" source that continues to provide contaminant mass to the aquifer, especially during water table fluctuation events.

Section 6
Site Characteristics

6.1 Soils and Topography

The Pre and Post source removal Site topography are depicted on Figures 3 and 4, respectively. Figure 5 is the existing Site conditions map, showing all existing groundwater monitoring wells, surface water staff gauges, ground topography, and other Site features. In general, the Site is flat to gently sloping. The Site is topographically split by the former railroad track bed, currently a recreational trail. Surface drainage on the northwestern side of the trail is to the northeast into the low area around the MW-18 well cluster. Surface drainage on the southeastern side of the recreational trail is predominantly eastwards towards the drainage ditch, but is southwards towards the Rockaway River on the 60-100 foot wide strip along the river.

The distribution of surficial soils at and surrounding the Site is shown on Figure 6. Note that a transition into finer-grained soils (Whitman very stony loam) occurs directly east of the former LEC Building 14 and RR spur, and can be seen on the section of the USDA soils map reproduced on Figure 6. A detailed summary of soil types found at the LEC facility and their characteristics can be found in Section 2.3 of the 2004 RA Work Plan.

6.2 Site Geology

The regional and local geology is detailed in the 2004 RA Work Plan, the March 28, 2003 Abandoned Mines Evaluation report, and in the WESTON September 1992 Final Supplemental Remedial Investigation Addendum for L.E. Carpenter and Company. This section summarizes geologic information from those reports, as well as from other available sources. This summary focuses on those aspects most critical to the remedial investigation project contained in this 2004 RA Work Plan Addendum.

The Site is located in the Dover Quadrangle, within the Highlands Physiographic province. Bedrock in this area consists mainly of Precambrian-age metamorphic and igneous rocks arranged in northeastward trending ridges separated by valleys that range between 200-300 feet below the ridge crests. These rocks have been mapped by Sims, Davidson, and Koch (1949), and a portion of their map in the immediate vicinity of the Site is reproduced on Figure 6.

The bedrock formations host extensive magnetite deposits that comprise one of the oldest mining regions in the United States (the Dover mining district). The iron ore deposits are denoted on Figure 6 as northeast-trending solid and dashed red lines. These lines represent the strike of the somewhat tabular lathe-shaped ore bodies, or the interception of the ore bodies with the earth's surface. The ore bodies, along with their host rocks, dip approximately 40+ degrees southeast.

The bedrock deposits are covered by variable thicknesses of unconsolidated soils from glacial (deposited directly by former ice sheets) and alluvial (deposited by glacial melt-waters and post-glacial streams) processes. These deposits have been mapped by Stanford (1989) on the scale of the Wharton 7.5-minute quadrangle (1-inch = 2,000 feet) and part of that map is reproduced herein on Figure 6.

Regionally, Wharton is located near the southernmost-extent of the most recent Wisconsinan glaciation event, within a terminal moraine (see inset on Figure 6 labeled "Maximum Extent of Wisconsinan Glaciation"). A terminal moraine is composed of glacial till (a heterogeneous mixture of clay, silt, sand, and gravel) deposited directly from glacial ice at the terminus of the glacier, or various proportions of till and stratified drift. Stratified drift included in terminal moraines would be deposited in ephemeral ponds and puddles between glacier and moraine or within small basins within the moraine itself, and as fans and stream channel fillings mainly on the distal slope of the moraine.

Following the retreat of the Wisconsinan ice-sheet, the ancestral Rockaway River formed as glacial melt-waters drained away from glacial lakes, as shown on the inset in Figure 6. The terminal moraine till deposits shown on the surficial geology map on Figure 6 are colored in bright green (symbol Qlwtm); these deposits are closely associated with the lodgment (basal glacial) till colored in the lighter green color (symbol Qlwt). Two other deposit types mapped on the regional surficial geologic map that are relevant to the Site are Rockaway River outwash gravels and more recent post-glacial alluvium consisting of silt and fine sand with minor clay and pebble to cobble gravel.

The processes described above are responsible for the naturally occurring deposits found at the Site. Near-surface soils at the Site range from artificial fill covering Rockaway River outwash sand and gravel on approximately the western half of the Site, and deposits that appear to range from finer-grained post-glacial alluvium and/or till along the eastern half of the area.

6.3 Site Hydrogeology

The hydrogeologic conditions of the Site have been presented in the 1990 Report of Revised Investigation Findings, L.E. Carpenter & Company, by GEI, and in the 1992 WESTON report entitled Final Supplemental Remedial Investigation Addendum for L.E. Carpenter and Company. More recent data collected after the source removal in 2005 includes well clusters MW-28 through MW-35. Boring logs for all monitoring wells currently evaluated on a quarterly basis, including MW-28 through MW-35, are included in Appendix F, with water level data for 2Q09 presented in Table 3.

Figures 7 and 8 show conceptual cross sections of current geologic conditions at the Site, along east-west and north-south transects respectively. The cross sections take into account all historical data and extend through the new PRMP downgradient monitoring locations in the wetland area. In the western portion of the Site, the upper stratum is composed largely of sand and gravel outwash, overlain by a thin layer of fill. In the eastern portion of the Site, this outwash unit is overlain by relatively low-permeability silt and clay that occurs within the upper 5 to 10 feet, based on the 1992 WESTON Supplemental Remedial Investigation Report. Presumably these finer-grained deposits mostly represent alluvium from the Rockaway River, although some may also be a result of post-depositional melting of outwash-entrained blocks of glacial ice. However, later borings for Enhanced Fluid Recovery (EFR) wells and recent exploratory trenching identified a significant amount of sand and gravel in the upper alluvial unit at a number of locations within the free product zone that were previously identified as being silt alluvium. In addition, it now appears that the upper alluvial unit is thinner than previously thought, is quite variable laterally, and includes areas of silty sand as well as silt and clay. The upper alluvial unit of silt, sand, and clay overlies deeper permeable units (up to 170 feet total in thickness) composed of stratified drift of sand and gravel deposits originating from glacial-melt outwash.

The shallow sediments that occur just beneath the surface on the western portion of the Site have a hydraulic conductivity of approximately 37 feet/day (WESTON, 1992a). The hydraulic conductivity of the upper stratum of silt and clay alluvium that occurs in the eastern portion of the Site has not been measured, but is likely on the order of 1 foot/day or less, based on geologic log descriptions. The horizontal hydraulic gradient varies across the Site, but it averages approximately 0.0016 ft/ft, based on examination of equipotential maps from GEI (1990), WESTON (1992a), and RMT (2003). Assuming a typical effective porosity of 0.3 (Freeze and Cherry, 1979), the horizontal groundwater seepage velocity is approximately 73 ft/year in the shallow portion of the outwash sand.

Shallow groundwater flow is substantially affected by adjacent surface water bodies. The 2Q09 Site wide shallow water table map (Figure 9) is based on data included in Table 3. This map indicates that groundwater flow direction in the shallow aquifer east of the recreational trail (the former rail spur) is generally toward the east. Washington Forge Pond acts as a constant head boundary that provides the driving head for both shallow and deep groundwater flow. As a result, areas of the Site exhibit upward vertical gradients, while the drainage ditch acts as a discharge zone, as does the downstream portion of the Rockaway River. The portion of the Rockaway River south of and immediately adjacent to the Site is often a losing reach, particularly in drought periods when the groundwater levels beneath the Site are depressed a few feet and a gradient from the river into the Site occurs. Further downstream the River oscillates between losing and gaining and the flow regime is often difficult to define.

Shallow groundwater flow is also affected by the presence of the drainage ditch. The drainage ditch acts as a local groundwater "sink," and shallow groundwater flow from a large portion of the Site is controlled by the drainage ditch.

The regional groundwater "sink" for this area is the Rockaway River, and it is this feature that causes the strong upward vertical gradients observed for all of the on-site well clusters. Historical water level data for this Site confirms the predominant upward vertical gradients across the Site.

Historically, shallow groundwater at the southern edge of the Site often appears to be recharged directly by the Rockaway River and flows towards the Site before turning eastward toward the drainage ditch and the narrow area between the former Air Products property and the Rockaway River owned by Wharton Enterprises. At other times, flow at the southern edge of the Site appears to head east-northeast parallel to the Rockaway River. Shallow groundwater on the Air Products property flows southeast, south, and southwest towards the drainage ditch.

6.4 Groundwater Quality

The well clusters within the central (MW-28s and i cluster) and downgradient (MW-30s, i, and d cluster) portions of the source reduction area have 2 and 3 wells respectively. The shallow well screens (well labeled with an "s" are directly below the slurry monolith floor at 10 to 15 ft bgs. The intermediate monitoring wells (wells labeled with an "i") were screened in approximately the next 5 feet below the bottom of the shallow well screen at 15 to 20 ft bgs. The deep monitoring well MW-30 (well labeled with a "d") was screened 5 feet below the bottom of the intermediate well screen at 20 to 25 ft bgs.

Groundwater analytical results for 2Q09 are included in Table 4 (BTEX and DEHP), Table 5 (MNA laboratory analytical data), and Table 6 (field MNA parameters). Surface water quality data are included in Table 7.

Historically, Site contaminants of concern continue to be found dissolved in groundwater in source reduction area downgradient well MW-30s. No contaminants have been detected in wells MW-30i and MW-30d, with the exception of three small detections of DEHP in MW-30i, just slightly above the detection limit. This indicates that the vertical extent of Site constituents of concern in the vicinity of the MW-30 cluster is limited to only the top five feet or less of the shallow water table (within the first five feet of aquifer immediately below the slurry monolith).

Although overall concentrations of all constituents of concern in MW-30s continue to trend significantly downward (as of October 2008, only DEHP remained above drinking water criteria in MW-30s), because of the fluctuating concentrations of DEHP in MW-30s, RMT addressed the scope of work in this RA Work Plan addendum to satisfy the requirements outlined in NJDEP's NOD letter received on June 25, 2008, as well as to address residual contamination just outside of the downgradient part of the main source reduction area (wetland area wells just installed in spring 2008).

As part of the 2Q09 sampling event, RMT also sampled the five (5) wetland area wells (MW-31s, MW-32s, MW-33s, MW-34s, and MW-35s) for groundwater quality. The location of these wells, with respect to the source reduction and wetland areas, are shown on Figures 2 and 5. Monitoring well MW-31s is located on the southern edge of the drainage ditch where it bends around the Air Products property. Monitoring well MW-32s is south of MW-31s and is midway between the drainage ditch and the Rockaway River. Monitoring well MW-33s is west-southwest of MW-32s and located near the entrance to the wetland area just off the northern bank of the Rockaway River. Monitoring well MW-34s is southeast of MW-32s. Monitoring well MW-35s is east of MW-34s, just upgradient from the river edge location where product sheen had been previously observed (before the source reduction) to be migrating directly into the river.

During 2Q09, groundwater samples collected from all of the wetland area wells had concentrations of DEHP above the higher of the C2A NJGWQS and PQL. Groundwater samples collected from MW-31s, MW-32s, MW-34s and MW-35s also contained concentrations of Ethylbenzene and total Xylenes above the higher of the NJGWQS for Class II-A aquifers and the practical quantitation level (PQL) (Table 4). Benzene was above the higher of the NJGWQS for Class II-A aquifers and PQL at MW-31s, MW-32s, MW-34s and MW-35s (Table 4). The concentration trends of dissolved benzene, Ethylbenzene, and Xylenes will continue to be carefully monitored. Furthermore, additional investigations to determine nature and extent is proposed for this area as addressed in Section 8 of this addendum. The scope of work that will be proposed will focus on gathering data that will be used to develop a means to prevent further discharge of groundwater contamination into the drainage ditch and Rockaway River.

In 2Q09, low levels of dissolved COCs continue to be found in groundwater in the source reduction area interior monitoring wells MW-28s and MW-28i (see Figure 10 and summary of organic results in Table 4). The concentrations of dissolved benzene, Ethylbenzene, and Xylene appear to be generally decreasing over time in the MW-28 well cluster. In fact, no BTEX constituents are present at levels that exceed current New Jersey Groundwater Quality Standards (NJGWQS). Dissolved DEHP increased at MW-28s during 2Q09 but the overall trend is a decrease in DEHP concentration.

Site COCs also continue to be found dissolved in groundwater from source reduction area downgradient well MW-30s (Figure 10). However, for the past eight events, no detectable COCs have been present in samples from wells MW-30i and MW-30d. This indicates that the vertical extent of Site COCs in the vicinity of the MW-30 cluster is limited to only the top five feet or less of the aquifer immediately below the slurry monolith. In addition, DEHP and BTEX concentrations are fluctuating in monitoring well MW-30s, but overall concentrations are generally decreasing (Figures 11 and 12**,** respectively). Some of the fluctuations show DEHP concentrations above the saturation limit for that constituent. Delineation of the COCs in groundwater in the vicinity of MW-30s is one of the objectives of this RA Work Plan Addendum.

MNA parameters for groundwater are presented in Table 5 (analytical data) and Table 6 (field parameters). These data indicate that the groundwater is strongly anaerobic downgradient of the source removal area as shown by low dissolved oxygen (*e.g.*, DO<1 mg/L[1]), negative redox, high ferrous iron concentrations (*e.g.*, >1 mg/L[1]), non-detectable nitrate and measurable ammonia-nitrogen, low sulfate concentrations (*e.g.*, <0.5 mg/L[1]), and the presence of significant methane concentrations (*e.g.*, >500 µg/L[1]). Well MW-25R indicates somewhat less reducing conditions in that the methane concentrations are typically less than 100 µg/L, measurable sulfate and occasionally lower iron concentrations and measurable DO. Redox sensitive parameters at upgradient well MW-27s indicates that, at times, the groundwater is aerobic (*i.e.*, high DO, low iron, "background" sulfate, *etc.*); however, at other times the upgradient groundwater still has indications of being somewhat reducing.

6.5 Surface Water Quality

6.5.1 Eastern Drainage Channel

As part of the quarterly monitoring events, five (5) points within the eastern drainage channel that separates the adjacent former Air Products facility from the Site and the adjacent Wharton Enterprises property are sampled for surface water quality (see location on Figures 2 and 5). This sampling is conducted at the request of NJDEP as outlined in their letter dated March 23, 2005.

During the 2Q09 sampling event, locations SW-D-1, SW-D-2, SW-D-3, SW-D-4, and SW-D-5 were sampled. COCs have been detected at low levels sporadically in some of the drainage ditch surface water samples, but the level and frequency of these detections appear to be decreasing over time (Table 7).

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[1] These criteria for anaerobic water are from USEPA, 1998. Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water. USEPA/600/R-98/128

6.5.1 Rockaway River

In addition to the drainage channel, seven (7) surface water samples from the Rockaway River are also collected (See locations on Figures 2 and 5).

During the 2Q09 sampling event, Rockaway River surface water samples SW-R-2 through SW-R-4, SW-R-6, and Washington Forge Pond surface water sample SW-R-5 had no detectable COCs.

Sample SW-R-1 is collected near the river edge adjacent to the location where product sheen had been previously observed in the river (before the source reduction). As discussed in earlier reports, the sheen was discovered in 2004 as a visible coloration on top of quiescent water pooled within the wetland area. DEHP was not detected in the surface water sample from SW-R-1 in 2Q09. No product sheen was observed at this location during the 2Q09 event.

Another surface water sample is collected in the drainage ditch near its intersection with the Rockaway River approximately 10 feet upstream in the drainage channel (see location on Figures 2 and 5). Based on the groundwater contour elevations and aerial extent of surface water (Figure 9), this location represents the principle discharge point from the drainage ditch/beaver pond into the Rockaway River. Similar to the other river samples collected in 2Q09, the “Ditch-River Confluence” sample DRC-2 had no detectable BTEX or DEHP.

6.6 Wetlands, Floodplains and Floodway

The location of wetlands on and near the Site, and floodplain and floodway related Site information is shown on Figure 13.

6.6.1 Source Reduction Wetland and Floodplain Permitting

A detailed delineation of wetlands was performed during the permitting phase prior to implementation of the 2004 RA Work Plan in January through June 2005. Delineation of wetland areas was facilitated via review of historical Letters of Interpretation (LOI) and on-site surveying performed in March 2004 by a wetlands expert (JFNew). A portion of the source reduction action included excavation of soil within the wetland areas located along the Air Products drainage ditch on the eastern side of the Site, and within the off-site Wharton Enterprise property east of the LEC property line. LEC applied for a Freshwater Wetlands/Open Water Fill Permit General Permit No. 4 ~ Hazardous Site Investigation and Cleanup in accordance with N.J.A.C 7:7A-5.4. Authorization to proceed with source reduction remedial activities within the wetland

and transition areas was provided in the *Authorization for Freshwater Wetlands Statewide General Permit No. 4 (File No. 1439-04-0001.1 FWW 040001)* ("the GP-4 permit") dated February 25, 2005. Information specific to these wetland delineation activities is presented in the *Freshwater Wetlands General Permit 4 Application* (RMT and JFNew, October 5, 2004), subsequent response to NJDEP DLUR comments on the GP-4 permit application, and the GP-4 permit itself (Appendix G).

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map, Community Panel No. 340364 0001B, effective date February 19, 1987, the eastern portion of the Site (east of the rail-to-trails, Block 801 Lot 1) is located within Zone AE. This zone is defined as 100-year floodplain with base flood elevations determined. No excavation was proposed in the Rockaway River floodway, however, as outlined in the 2004 RA Work Plan. LEC applied for and received a Stream Encroachment Permit in accordance with N.J.S.A. 58:16A-58 et seq and N.J.A.C. 7:13 to permit excavation within the 100-yr floodplain. Copies of all Stream Encroachment Permit related reports and correspondence is also presented in Appendix G.

6.6.2 PRMP Implementation Wetland and Floodplain Permitting

Discussions were initiated between RMT and both NJDEP and USEPA during the fourth quarter of 2005 (4Q05) regarding the development and installation of the post source reduction Site monitoring network in accordance with the submitted PRMP. A formal regulatory review and comment letter regarding the PRMP was received by LEC on February 22, 2006. RMT prepared a response to the February 22, 2006 NJDEP comments in Section 1 of the 1Q06 RAPR dated May 9, 2006. NJDEP approved the 1Q06 RAPR including response to the PRMP comments in their letter dated March 30, 2007.

RMT began installing the PRMP monitoring well network within the source area on June 5, 2006. RMT and LEC submitted the necessary GP-14 permit application to the NJDEP LURP on August 14, 2006 requesting authorization to install the remaining five monitoring wells in the wetland area located east of the Site (Wharton Enterprise property). In February 2007, RMT was notified during follow up conversations regarding approval of the GP-14 application that a modification to the existing Stream Encroachment Permit (1439-04-0001.1 FHA040001 SEP) would be required in order to allow the placement of fill material in the 100-year floodplain. This fill material is required because the remaining five monitoring wells must be installed through mounds to facilitate screening the shallow water table with a properly constructed well. RMT submitted the requested SEP modification to NJDEP LURP on March 26, 2007 to avoid further delays.

The GP-14 permit/SEP modification permits were received March 31, 2008. RMT, on behalf of LEC, formally requested a waiver from the requirements of ***GP-14 Permit Special Condition No. 1 – Prohibition of construction activities between the dates of March 15 and June 15 to protect the trout stocked water of the Rockaway River*** in a letter dated March 18, 2008. Specifically, RMT requested approval to install, construct, and restore the five (5) mounded groundwater monitoring wells as described in the GP-14 permit application dated August 15, 2006 [Revised March 22, 2007 and last revised September 7, 2007] during the week of April 7, 2008. RMT received approval of waiver in an email from the Bureau of Freshwater Fisheries dated March 25, 2008. Therefore, on April 6, 2008, RMT mobilized to the Site to complete the PRMP well network installations.

Copies of the PRMP implementation specific wetland and floodplain information and permits are presented in Appendix G.

6.7 Land Use, Environmentally Sensitive Areas and Sensitive Human Receptors

Figure 14 shows potential sensitive environmental and human receptor areas within an area defined by a 1,000-foot radius from the area of concern boundary. The area of concern is defined as the Site, together with the western portion of the Wharton Enterprises area (encompassing the easternmost extent of dissolved-phase groundwater contamination emanating from the Site). Sensitive environmental areas within 1,000 feet of the area of concern include the Rockaway River bordering the Site to the south, and wetland areas located along the drainage ditch on the eastern side of the Site, within the off-site Wharton Enterprise property east of the Site property line, and various wetlands located within 1,000 ft to the north and west of the Site. Human receptors within 1,000 feet of the Site include the high density, multiple dwelling residential areas located immediately southwest of the Site, and the single unit, medium density residential area located north of the Site. The nearest public community water supply well is located outside of the 1,000-foot radius area, approximately 3,000 feet to the west (upgradient) from the Site boundary. Additional public community water supply wells are located to the southeast, with the closest being approximately 3,500 feet from the Site boundary.

6.8 Cultural Resource Issues

Cultural resources issues were investigated in March 2004. The NJ Historic Preservation Office (HPO) agreed that the possibility of identifying historic properties on the Site during implementation of the source reduction remedial project was low given the extensive surficial disturbance, and the absence of historic deposits at the Site. In a letter dated September 30, 2004, NJ HPO stated that LEC complied with Section 106 of the National Historic Preservation Act of 1966. No further action was required.

Section 7
AOC Current Conditions

7.1 MW-30 Area

7.1.1 General

As described in Section 5.1, a large source reduction excavation was conducted to remove LNAPL consisting of DEHP and BTEX. The current distribution of these COCs in the vicinity of the former LNAPL smear-zone area is described in Section 7, and the most recent data is summarized on the 2Q09 groundwater quality map shown on Figure 10.

The areas of concern raised by the NJDEP in their June 19, 2008 letter include the potential for discharge of COCs in groundwater to the drainage ditch and the Rockaway River, specifically in the vicinity of well MW-30s, and potential continuing source area(s) in the groundwater that may be affecting surface water.

Potential remaining COC source(s) that may exist are areas that were not excavated during the 2005 source reduction remediation, especially downgradient edges of slurry-excavation adjacent to the river and drainage ditch. These two areas of concern, groundwater and potential remaining source(s), and the data needed to assess these areas are described in the following subsections.

7.1.2 Potential Remaining Source(s)

Historic releases of liquids at the Site resulted in DEHP/BTEX occurring in the soils and groundwater in both free-product LNAPL and dissolved phases. The 2005 source reduction resulted in the removal of 34,000 plus tons of contaminated smear zone soils with the associated LNAPL contained in these soils. The area of this removal is shown on Figure 5; the depth of the excavation extended below the zone where LNAPL was observed to be present as outlined on the cross sections in Figures 7 and 8.

Potential remaining source(s) would likely include residual isolated pockets of DEHP/BTEX LNAPL that may be present outside the source reduction area. Current observations that indicate potential remaining source(s) are as follows:

Direct Observations

Based on the description of the current Site characteristics (see Section 6), there is one well that has a small thickness of LNAPL observed during the 2nd quarter 2008 (MW-32s 0.10 ft on May 5, 2008). In addition, some evidence of LNAPL as isolated "blebs" and pre-well installation free product was observed while drilling MW-35s. However, since installation and development, LNAPL has not been detected in that well, although DEHP concentrations in groundwater were detected above the solubility limit.

Indirect Observations

There are several wells that have concentrations of DEHP in excess of its single compound solubility in water (0.285 mg/L @ 24°C [http://www.epa.gov/OGWDW/dwh/t-soc/dehp.html]). Wells with DEHP concentrations that are approximately equal to or in excess of solubility indicate there is probably some residual phase or potentially free phase LNAPL within the area of the well. These wells include: MW-30s (although concentrations have declined below solubility limits in 2Q09), MW-31s, and MW-35s. Wells with DEHP concentrations less than 1% of solubility (2.85 μg/L) indicate that no NAPL probably exists. These wells include MW-25(R), MW-27s, MW-29s, MW-33s, and MW-34s and establish the limit beyond which any residual or free phase NAPL probably does not exist.

The Safe Drinking Water Act (SDWA) Maximum Contaminant Levels (MCLs) for BTEX and DEHP are equivalent to or less stringent than the higher of the PQL and NJDEP GWQS as provided in Table 4. Monitoring wells MW-31s, MW-32s, MW-34s, and MW-35s are above criteria for benzene, toluene, Xylene, and DEHP. MW-33s exceeds criteria for DEHP.

Based on these two sets of observations (i.e., direct [analytical] and indirect), the two areas that may contain remaining source(s) are shown on Figure 15.

These areas include a narrow strip of property located between the source removal area and the drainage ditch and an area east of the source removal area between the drainage ditch and the Rockaway River. The strip of property between the source removal area and the drainage ditch is approximately 10 -15 ft wide and potentially 120 ft long.

The potential source area east of the principle source reduction area is somewhat undefined, but the potential limits of this AOC are also shown on Figure 15. This area extends east from the edge of the source reduction area out to potentially well MW-35s but it does not extend to well MW-25R which was shown to be clean with respect to DEHP and BTEX. This potential source area may extend from the edge of the drainage ditch to an area near the Rockaway River. The absence of LNAPL indications at wells MW-33s and MW-34s indicate a southern limit to the area.

7.1.3 Groundwater

Section 6 describes the conditions controlling groundwater flow and the distribution of groundwater quality. As described in this addendum and shown on Figure 9, groundwater flow direction from the main source reduction area is toward the east, including flow-paths towards the drainage ditch, wetland area, and to the Rockaway River.

Groundwater within the remaining potential source zone contains the COCs DEHP and BTEX. These COCs extend from beneath the source removal area to both the drainage ditch (MW-30 well cluster) and the Rockaway River (MW-34s with predominantly Xylenes and MW-35s with predominantly DEHP; see Figure 10). Some of this contamination is likely a function of easterly groundwater flow that has transported the COCs eastwards from the source reduction area to an unknown point between wells MW-35s and MW-25(R), but most of it may be a function of potential remaining source within the wetland area. As shown on Figure 10, well MW-25(R) indicates no detectable COCs, which served to define the eastern-most extent of dissolved phase LNAPL contamination.

7.1.4 Drainage ditch

The drainage ditch, located northeast of the Site and shown on various Site figures, is considered a receptor of groundwater contaminant discharge. The groundwater remediation standard included in the June 19, 2008 NJDEP letter is to prevent groundwater discharge of Site related contaminants to the drainage ditch. Therefore, the groundwater discharging to the drainage ditch is considered an area of concern for the purposes of characterization in this addendum.

7.1.5 Rockaway River

The Rockaway River, located south and east of the Site and shown on various Site figures, is considered a potential receptor of groundwater contaminant discharge. The groundwater remediation standard included in the June 19, 2008 NJDEP letter is to prevent groundwater discharge of Site related contaminants to the River. Therefore, the groundwater discharging to the Rockaway River is also considered an area of concern.

7.2 MW19HS1 Area

As described in Section 5.3, the MW19HS1 area was defined as an organic "Hot Spot" during the initial 1990 RI. Removal of process USTs and surrounding soils took place (1990 to 1995) in compliance with the 1994 ROD, along with continuing groundwater monitoring and reporting in compliance with the 1986 ACO. Based on more recent investigation, data suggest residual source material exists at depth underneath portions of the Building 9 floor slab and footers, and along the exterior eastern side of the building. In 1Q09, a survey of Building 9 and associated infrastructure (interior and exterior) was performed in preparation for building demolition prior to implementation of the soil remedy outlined in this addendum. Figure 16 shows the details of the Building 9 pre-demolition survey. As described in Sections 4 and 6, the residual source material and impacted groundwater associated with the MW19HS1 area remain within the Site boundaries.

Section 8
MW-30 Area Remedial Investigation

8.1 General

Data collection objectives for this AOC are to:

- Further characterize and delineate dissolved-phase organic COCs in groundwater in the vicinity of MW-30S;
- Identify potential residual source area(s) of organic COCs that could result in discharges to the drainage ditch or the Rockaway River;
- Determine whether Site related contaminants from the remaining residual source area(s), if any, are impacting the wetland – both within and/or outside the Potential Remaining Source Area of Concern as outlined on Figure 15; and
- Characterize the rate and cause of concentration declines observed in most of the wells on the Site.

These data collection objectives are based on:

- Historical investigations as summarized in this addendum.
- Previously implemented remedial actions.
- Existing Site conditions as summarized this addendum.
- The potential remaining source AOCs as described in this addendum.

Activities needed to fill these data gaps are outlined on Table 8 and described in the following areas of concern. The Sampling and Analysis Plan (SAP), Quality Assurance Project Plan (QAPP), Construction Quality Assurance Project Plan (CQAPP), and Health and Safety Plan that will control work conducted as part of this addendum are included in Appendix H.

8.2 Remaining Residual Sources Investigation

The data collection objective for the remaining potential source area is to determine the extent of LNAPL in residual or free phase so as to determine the extent and magnitude of a potential remediation system needed to prevent the potential for COCs to discharge to the drainage ditch or river at concentrations above background concentrations as described in Section 3.2 (*i.e.*, non-detect standard for Site surface waters based on the data presented in Table 4 for SW-R-5 and SW-R-6).

A drilling rig utilizing the dual-tube Sonic drilling technology is proposed to complete the MW-30 area remedial investigation. The sonic method eliminates the potential penetration issues associated with probable large boulder trains within subsurface outwash gravels. Use of the dual-tube sonic drilling technology provides a means of obtaining continuous soil samples that can be used to conduct in-field testing (with PID and Oil-N-Soil kits), prevent sloughing/cross-contamination, and provide sufficient soil quantity to collect/submit soil samples to the laboratory. The cores collected from each location shown on Figure 15 will be conventionally logged and sampled to determine the vertical distribution and nature of any residual LNAPL that is present. Oil-N-Soil test kits will be used in the field, at regularly-spaced intervals, to evaluate the nature of residual NAPL (see QAPP) in real time. The Oil-n-Soil® kits were approved by both USEPA and NJDEP and used successfully during the December 2004 pre-construction boring program to delineate vertical extent of free product. Examples of Oil-N-Soil outputs are provided in the QAPP and in the February 1, 2010 *Response #2 to the December 21, 2009 USEPA Comments on the September 2009 Addendum to the Remedial Action Work Plan for Source Reduction* found in Appendix E.

It is anticipated that one confirmatory soil sample each, for both the contaminated zone and vertical "clean" zone, will be collected and submitted to the laboratory for BTEX, DEHP, and grain size analyses. It is anticipated that a minimum of one soil sample per sonic core run (ten vertical feet) will be used to screen the soils for the presence of LNAPL, plus additional samples for any geologically significant change in lithology that occurs within any one core run. Establishing lateral clean zones will be completed by installing boring locations on 30-40 foot centers as located on the attached Figure 15, together with confirmatory laboratory analyses as described above. Note that the "Potential Remaining Source Area of Concern" shown in yellow on Figure 15 is based on data from the existing PRMP monitoring wells, as well as groundwater flow directions. Use of a "step-out" approach will allow adequate definition of the remaining impacted area. For example, if field data indicate that product exists at SB-3, then a step-out boring will be placed approximately ten feet east.

Two representative soil samples from each permeable soil unit (anticipated to be 4 samples) will also be submitted for total chromium and total organic carbon analyses. Field sampling methods and the laboratory analytical methods for the soil BTEX and DEHP analyses are described in the QAPP.

8.3 Groundwater Sampling, Sediment Sampling, and Characterization

Groundwater sampling events will continue on a quarterly basis in all of the previously installed PRMP monitoring wells. In addition, a round of sediment and pore water samples will be collected, and an enhanced biodegradation pilot study will be conducted to assess the potential viability of the use of biodegradation methods to achieve remedial action objectives.

8.3.1 Sediment Sampling

The baseline sediment sampling event, proposed in response to USEPA's comment outlined in the January 22, 2009 letter regarding Section 4.5 of the MW-30 RIW (Ref. Appendices C and D), will include a "targeted" sampling approach with sample locations coinciding with the existing surface water sampling locations in the Washington Pond, Rockaway River, and the drainage ditch (Table 8). Sediment sampling procedures will consist of:

- ***Sampling Locations-*** Sediment samples will be collected at or near each of the current surface water locations (12 total) plus one (1) duplicate location (Figure 2).
- ***Sampling Procedures-*** A sample of the drainage ditch/river sediment will be collected using a variety of methods and equipment depending on the conditions encountered. Specifically, Site conditions include the preponderance of large cobbles and gravel, which are neither conducive nor appropriate for sediment testing purposes. Sediment samples will either be collected directly using a hand held device such as a shovel, trowel, or auger; or using a device such as a hand corer device. Each sediment sample will have two target sampling intervals collected at 0–0.5 feet and 0.5–2 feet below the bottom of the river and ditch. Sediment will be transferred from the sampling device to the appropriate sample container(s) for laboratory analysis or field homogenization. Field homogenization will be performed only if necessary to get the appropriate volume of fine-grained sample required by the laboratory by combining multiple grab samples, mixing to create a uniform sample, and transferring to the appropriate laboratory container(s).
- ***Field Measurements and Observations-*** Field parameters of the overlying water (temperature, pH, DO, and conductivity) will be collected as part of the sediment sampling as well as sediment sample characteristics (water depth, soil penetration depth, any problems while sampling, percent recovery, description based on feel, *etc*.).
- ***Laboratory Analysis-*** Shallow (0–0.5 feet) sediment samples will be analyzed for Site organic COCs (BTEX and DEHP), grain size, and moisture. Deeper (0.5-2 feet) sediment samples will be extracted, where necessary, and archived for subsequent analysis of Site organic COCs (BTEX and DEHP), grain size, and moisture pending results from overlying sediments.

8.3.2 Pore Water Sampling

Pore-water samples will be collected via stainless steel well points driven approximately 2 feet into the stream sediments at select sonic boring locations nearest to the surface water bodies and at the stream sediment sampling locations. Pore water samples will be analyzed for Site organic COCs (BTEX and DEHP). These data will be evaluated along with data generated from the proposed stream sediment sampling activities to provide an adequate evaluation of the GSI transition zone.

8.3.3 Hydraulic Conductivity Testing

Hydraulic conductivity tests will be conducted on each of the wells located generally downgradient of the source removal area to help in evaluation of remedial action alternatives. These data would be used to help determine the groundwater flow velocity, flux of COCs and potentially in conceptual design and costing of each alternative.

The hydraulic conductivity test will be conducted using the slug test method. At locations with an adjacent well, a mini-TROLL pressure transducer will be installed to monitor water levels on a short interval basis during the slug test. The slug test will be conducted using a 2 to 5-foot long slug using the following methods:

– After measuring initial water levels and well depths, the length of the transducer and slug depth will be measured and marked.

– A mini-TROLL pressure/temperature sensor will be placed in the well to 8 feet below the water level or, if the water column is less than 8 feet from the well bottom, 0.5 feet above the bottom of the well.

– The data logger will be set to record on a 0.2 second interval beginning after a 5 minute equilibrium time.

– After the transducer equilibrium time, the slug will then be quickly lowered down the well approximately 5 feet into the water column or 1 foot from the well bottom, whichever is less, and the water level will be allowed to equilibrate. Once the water has equilibrated, the slug will be rapidly removed and the transducer will again record the water level as the level returns to the original depth. Temperature and pressure data will be recorded using a mini-TROLL internal data logger to determine the head change during both the insertion and withdrawal of the slug. At wells that show relatively quick recharge, the slug test will be repeated twice to determine reproducibility.

An appropriate set of methods will be used to estimate hydraulic conductivity values, probably using the Bouwer and Rice and/or Hvorslev methods available in the Aquifer Test Pro 3.5 computer program. Data will be entered into the program to first create drawdown graphs. From the drawdown graphs, a default slope line used to calculate conductivity will be plotted using all of the collected data points. The slope line will then be modified to represent the straight-line portion of the drawdown data.

8.3.4 Groundwater Organic COC Biodegradation Pilot Study

A biodegradation pilot study will be conducted to allow for assessment of the potential viability of the use of active (*e.g.*, bio-augmentation) and passive (*e.g.*, natural attenuation) methods to achieve remedial action objectives. The currently available data is inadequate to determine whether biodegradation of the DEHP is a viable option to be considered for either the short term or the long term and under MNA or enhanced biodegradation methods.

The biodegradation pilot studies will be conducted as a bench-scale and field-scale pilot, if warranted. Initial bench scale testing will consist of fixed column studies to evaluate introduction of air, ozone, and nutrients mixtures on the reduction of organic COC concentrations. Undisturbed core samples for fixed column evaluations will be collected from a localized potential residual source area during the MW-30 RI field efforts. Following establishment of control and treatment columns, samples will be collected at 0, 15, 30, and 45 day intervals and submitted for analysis of DEHP, BTEX, and heterotrophic plate counts. Results of the bench-scale evaluations will be used to determine the need for and scope of the field scale pilot study.

The field scale Pilot Study, if indicated, will consist of installation of 3 air sparge wells in a tight cluster, installation of 3 observation wells, and operation/monitoring of the air sparge and observation wells for a period of 3 months. The air sparge wells will be installed in a triangular pattern spaced 25 ft apart to a depth below the observed COCs in excess of the groundwater standard based on surrounding monitoring well nests. This depth is approximately 15 ft below ground based on data from the MW-30 well cluster where MW-30i is typically below detection limits for DEHP and total Xylenes.

The pilot study is proposed to be conducted in an area where there is sufficient thickness of saturated, permeable soils to operate an air sparge pilot study *(e.g.,* at least 3 ft). The location is shown on Figure 15 to be adjacent to MW30s. However, a suitable location will be based on a combination of the existing data and results of the soil investigation described above in Section 8.2.

One observation well will be installed in the center of the triangle and the other two wells will be spaced 20 ft and 35 ft, respectively, downgradient of the center of the air sparge wells. The well in the center of the air sparge well cluster is intended to see rapid and intense response from the air sparge wells and will be used early in the pilot study to determine if aeration of the groundwater results in enhancing biodegradation. The downgradient observation wells will be used early in the pilot study to assess the radius of influence of the air sparge system. Wells will be screened across the water table, typically at a depth of approximately 5 ft.

The pilot study will initially be run without addition of nutrients or supplemental bacteria, to determine if aeration alone will promote biodegradation. Give that the groundwater has been in contact with DEHP for several years, it is anticipated that there has been sufficient time and opportunity for an acclimated bacterial population to have been established, although they may not have flourished because of the lack of adequate dissolved oxygen. Based on monitoring results of the pilot study, addition of nutrients (phosphorous and nitrogen) may be necessary as a small quantity of liquid fertilizer or the addition of specialized bacteria available from specialty bacteria supply firms. These decisions will be made after receiving results of monitoring after a period of 1.5 months.

Monitoring will consist of the following:

- Air sparge wells: Air injection rates and pressures on a continuous logging device. Groundwater samples will be collected from the air sparge wells if no biodegradation is detected at the observation wells. Analysis would be for BTEX, DEHP, and the MNA parameters from routine program.
- Observation wells monitoring groundwater quality will be analyzed as follows:
  - Field parameters – DO, pH, ORP, conductivity, turbidity, temperature, ferrous iron, alkalinity, and carbon dioxide.
  - Laboratory parameters – BTEX, and DEHP, heterotrophic plate count, TSS, TDS, nitrate nitrogen, ammonia nitrogen, total phosphorus, sulfate, and methane.
  - Frequency – twice prior to startup, weekly for 4 weeks upon startup, every other week after 4 weeks.
  - Sampling methods – low flow sampling using the same methods as the routine monitoring program.
  - Sample depth – at the water table.

8.4 Survey

Each monitoring point discussed in this section will be surveyed by a New Jersey-licensed surveyor. A permanent water level mark will be etched into the top of the inner well casing and surveyed to the nearest hundredth of a foot in relation to the permanent on-site datum. Each sample location will be surveyed horizontally to an accuracy of one-tenth of a second latitude and longitude. Surveyed sample locations will be reported in both State Plane and Lat/Long systems.

8.5 Wetland Restoration

A Wetland Restoration Plan for temporary wetland impacts was prepared and submitted with the initial Freshwater Wetlands Statewide General Permit No. 4 application package (Appendix G). LEC was granted authorization for permit number 1439-04-0001.1 (FWW 040001) by the New Jersey Department of Environmental Protection (NJDEP) Land Use Regulation Program (LURP) on February 25, 2005 (Appendix G). This authorization permitted the disturbance of ±0.42 acre of freshwater wetlands and/or State open waters and ±0.19 acre of wetland transition area.

The full extent of wetland impacts resulting from remediation of the MW-30 area is currently unknown, but will be determined during delineation efforts. As outlined in RMT's February 4, 2005 Response to Deficiency Letter (Appendix G), all wetland and transition zone impact areas will be restored to pre-remedial elevations and vegetation communities. All impact areas will be restored to an equal or higher quality vegetation community as specified in the response letter.

Temporary restoration using the wetland seed mix specified in the February 4, 2005 letter will be conducted following completion of the work outlined herein. Final restoration of the entire wetland area per the above referenced permit will not be completed until all wetland area investigations and remedial activities are complete and the area is in final MNA groundwater monitoring.

8.6 Supplemental Remedial Design Report

The results of this investigation, along with a proposed soil remedy in compliance with the 1994 ROD will be presented in the Final RA Work Plan Addendum (Ref. Section 2.4.2.)

Section 9
MW19HS1Soil Remediation

9.1 Remedial Objectives

This section presents the design criteria and approach to remediating the lateral and vertical extent of residual source material within the MW19HS1 area. As previously outlined, discussions with the USEPA regarding the MW19HS1 area resulted in the submittal of the LOI (RMT, January 5, 2009). The LOI outlined a more streamlined approach to remediating the MW19HS1 area by focusing the remedial alternative on soil excavation only. This section deals primarily with the excavation and handling of the soils and other activities in support of the remedial implementation, including, but not limited to: well abandonment, Site security, erosion controls and health and safety considerations. The remediation goal is to maximize the removal of as much residual BTEX and DEHP source mass in the unsaturated soil as is practicable.

9.2 Structure Removal

Prior to MW19HS remediation, Building 9 as shown on Figures 2, and 16**,** will be demolished, equipment salvaged, and debris removed to an approved off-site disposal facility. This demolition phase of the project is not part of the SOW nor discussed in detail within this addendum. It is mentioned only as a prerequisite scope to efficient AOC excavation.

9.3 Monitoring Well Abandonment

Prior to initiation of remedial activities, numerous monitoring wells and piezometers will be abandoned in accordance with N.J.A.C. 7:9D-3.1(g)(2). Many of these wells are located in areas of the proposed excavation. Table 9 presents a listing of all wells, their planned disposition, method of abandonment, approval status, and justification for abandonment. Wells to be abandoned are identified on Figure 17.

The post-excavation replacement monitoring well network will be proposed in the Remedial Action Report Addendum submitted following the completion of the soil remedy for both the MW19HS1 and MW-30 residual source AOCs. This report will describe the lateral and vertical extents of excavation as well as a delineation of the remaining residual material determined during the remediation. The post remedial monitoring well network will be installed following USEPA review and approval.

9.4 Site Security

Following well abandonment and demolition of Building 9 and prior to remedial construction, Site security measures will be implemented as outlined on Figure 18.

9.4.1 Fencing and Gates

Access to the Site will be restricted to authorized persons and vehicles by utilizing the existing fencing to the maximum extent possible. Additional fencing will be installed during the Building 9 demolition work to maintain security throughout the demolition and excavation process.

- It is anticipated that the fencing adjacent to North Main Street will be extended southeast along North Main Street and joined to the Southwest corner of Building 8 to create a secured southern Site boundary.
- Two (2) existing lockable gates located on Ross Street will be utilized during construction to maintain controlled access to the Site.
- All perimeter fences around the construction zone will be inspected and repaired as necessary to maintain Site security.

9.4.2 Signs

Informational and warning signs (numerically identified and described in the following paragraph with location shown on Figure 18 will be posted as follows:

Signs Nos. 1a and 2a - At both entrances off of Ross Street, signs will be placed on the fence facing the entering traffic that will identify the project by name, USEPA ID code, and informational telephone contact.

Signs Nos. 1b and 2b - Signs at both Ross Street entrances will be posted on the fence indicating that the area is an environmental remediation area, that the area is restricted to authorized personnel, and that all visitors must sign in. The TRC Project Representative telephone number will also be posted on these signs.

Sign No. 3a and 3b - Signs will be placed at the eastern Ross Street entrance and in area visible from Main Street along the southern fence; establishing that area as a Health and Safety exclusion zone. The sign will characterize the zone as a hard hat area and that all persons entering that portion of the Site will require suitable OSHA health and safety training and must report to the health and safety officer. A Health and Safety Plan has been attached as Appendix H.

Sign No. 4 – A sign will be placed at the western Ross Street gate for traffic exiting the construction zone noting that all vehicles must be decontaminated prior to leaving the area.

9.4.3 Security Log

A security log will be maintained during remedial construction activities. The log will include the date, name, company, and time in and time out of visitors entering the Site.

9.4.4 Traffic Routing

Figure 18 illustrates the general plan for routing traffic within the construction zone as well as on to and off of the Site during remedial construction. With the installation of the security fencing and gate improvements, all entering and exiting vehicles will be routed onto Ross Street. Access routing within the construction area will allow for a circular turnaround and ease of soil transport, processing, loading, and vehicle decontamination prior to off-site transport. All personal vehicles and vehicles not directly involved with soil handling, transport or testing will be prohibited from entry into the construction work area. All traffic management procedures will be reviewed and approved by the Borough of Wharton.

9.5 Work Area Delineation and Control

Prior to initiating excavation operations, the Maximum Limits of the planned excavation (limits of construction) will be staked and flagged. The working grid as will be staked based on a minimum 20-foot interval. Grid locations, limits of construction, and other pertinent Site features will be uploaded onto a hand held Trimble GPS unit to facilitate tracking of excavation progress and location, and to aid in location of future confirmatory samples. Survey baselines and elevations will also be established at strategic points to allow for easy monitoring of excavation depths.

9.6 Soil Erosion and Sedimentation Control

A Request for Authorization (RFA) (NPDES General Permit NJG0088323) for Stormwater associated with Construction or Mining Activity, along with a Soil Erosion and Sediment Control Plan (SESCP) pursuant to the requirements outlined in N.J. Soil Erosion and Sedimentation Control Act, Chapter 251, P.L. 1975 were submitted to the Morris County Soil Conservation District (MCSCD) in September 2004. As outlined in the 2004 RA Work Plan, Site activities included the excavation and grading of Site soils and the installation of a final surface consisting of a granular soil and topsoil layer. The 2005 source reduction remediation resulted in an earth disturbance of greater than 5,000 square feet, and therefore an SESCP was developed to minimize the potential for accelerated erosion and sedimentation impacts to surface waters. In accordance with Morris County Soil Conservation District approval requirements, the SESCP was available for on-site inspection throughout the source reduction construction period.

Construction activity proposed for the MW19HS1 area will disturb more than 5,000 square feet. As such MCSCD consultation and potential recertification of the 2004 SESCP will occur prior to implementation of MW19HS1 construction activities. TRC anticipates the installation of temporary erosion control measures at a minimum prior to initiation of earthwork activities. Any nearby off-site surface water structures and wetland areas will be protected from erosion and sedimentation due to on-site construction activities via a silt fence installed around the down-slope perimeter of the limits of construction. To prohibit tracking of contaminated mud and sediment from the Site by vehicular traffic, a decontamination pad will be installed at the location shown on Figure 18.

All stockpiles will be properly managed to ensure that run-off does not transport stockpiled material or contamination off-site. Methods utilized would include placing any excavated soil on plastic and covering stockpiles with plastic material to control potential run-off during rain events.

9.7 EPA Region 2 Clean and Green Policy

EPA Region 2 has implemented the Clean and Green Policy Program. The goal of the program is to promote the sustainable practices and technologies of all federal cleanup programs. Region 2 has chosen four touchstone technologies which should be implemented unless impracticability is determined at the Site or another green approach is considered more favorable. These technologies include; renewable energy, concrete made with coal combustion products, clean diesel, and methane capture.

As stated in the UAO, green remediation will be implemented at the Site. Clean diesel is an applicable technology for the MW19HS1 remediation. Implementation strategies include reducing the emissions of in-use diesel engines by promoting a switch to cleaner fuels; retrofitting, repairing, repowering, and replacing equipment; and reducing idling time of earth-moving equipment. TRC, LEC and our various subcontractors will incorporate these strategies during Site construction activities and document them in the RA Report Addendum.

9.8 Excavation Criteria

Discussions with the USEPA regarding the MW19HS1 area resulted in the submittal of the LOI (RMT, January 5, 2009). The LOI outlined a more streamlined approach to remediating the MW19HS1 area by focusing the remedial alternative on soil excavation only. Based on previous investigations summarized in Section 5.3 of this addendum, the horizontal and vertical limits of the non-saturated soils to be excavated are understood (Ref. Figure 19).

Figure 20 illustrates the proposed excavation plan. The limits of the primary excavation are extended outward from the base at a 1.5-feet horizontal to 1-foot vertical slope to illustrate the maximum likely excavation width needed to maintain stable excavation slopes. The target depth for the base of the excavation is approximate elevation 624 (12-foot depth). The target depth is based on historical low water elevation data obtained from Site quarterly monitoring events. Due to this remedial alternative outlined in the LOI focusing only on soil excavation, the actual footprint and depth of excavation will be dependent on the lateral remaining source area identified and current water table conditions during construction. The lateral remaining source area will be delineated during excavation using the field screening methods described in Section 9.9.2 (*i.e.*, visual observations and photoionization detector (PID) readings). Excavation activities will be suspended once all excavation perimeter observations and PID readings indicate that source area soils containing concentrations of COCs above cleanup criteria have been removed. Post excavation confirmation samples will then be collected as specified in Sections 9.9.2 and 9.9.3.

As described in Section 9.10.2, any area where a confirmation sampling point exceeds the cleanup criteria for BTEX or DEHP, additional soil will be excavated from the excavation and reconfirmation samples will be collected. If lateral constraints (*i.e.*, public right-of-ways, *etc.*) prevent full delineation and/or removal of impacted soils, soil samples will be collected from the excavation sidewalls (as specified in Section 9.9.2 and 9.9.3), and additional soil investigation activities (using a standard soil sampling methodology) will be performed if necessary to fully delineate the lateral extent of soil impacts. This will be documented in the RA Report Addendum.

Excavation **v**olumes and weights specific to each area within the limits of construction are presented below.

DESCRIPTION	IN PLACE CUBIC YARDS (IPCY)	TONS (1)
Proposed Excavation Limit	1,435	2,009
Side Slope Stability/Sloping	1,115	1,561

1) 2005 Source Reduction conversion factor of 1.4 tons/IPCY used

Figure 20 illustrates that the proposed limits of construction will not extend past the Site fence located to the Northwest of the construction area to limit the removal of fence and potential conflicts with working in close proximity to Ross Street. In the event that additional residual source material is encountered in this area, contingency measures as described in Section 9.10 will be implemented.

9.9 Remediation Approach Sequence and Elements

9.9.1 Equipment Staging and Operations

Figure 18 shows the location of various staging and operation areas planned during the remedial construction work. Temporary facilities will be established before earthwork activities begin. Facilities such as an office location (trailer), sanitary facilities, trash service, and a temporary stone construction exit pad will be established.

Potential areas for soil staging and stockpiling have been displayed on Figure 18. Appropriate sediment control (silt fencing) will be utilized to ensure that stockpiled material does not leave the construction area.

Other features such as the proposed truck routing plans, Site security, and erosion control methods are discussed in previous sections of this Addendum.

9.9.2 Soil Excavation and Screening Process

Existing topsoil within the limits of construction will be removed and stockpiled prior to soil removal activities for potential reuse during final grading and Site restoration. All imported or reused material (*i.e.*, existing or imported topsoil and/or crushed concrete from the Building 9 demolition) will be certified clean prior to reuse on the Site. All certificates will be included in the Remedial Action Report Addendum following completion of the soil remedy for both the MW19HS1 and MW-30 residual source AOCs.

Soil excavation in the MW19HS1 area will begin at the estimated southeast limit of the residual source area, the location 0 + 0' near the centerline as displayed on Figure 20. Excavation will progress in a direction northwest and outward to the north and from this location into the residual source area.

The excavation will be extended to the Southeast in the event that additional source area material is observed in this direction (observation procedures described below). Soil will be excavated to a vertical extent of approximately 12 feet or until the current water table is encountered.

Contingencies for excavating laterally past the fence line along Ross Street to the Northwest or vertically past 12 feet in depth are described in Section 9.10.1 of this addendum.

Excavated soils and excavation side-walls will be field screened using visual observations and photoionization detector (PID) readings to monitor progress of source area material removal. A correlation between PID readings and laboratory analyzed soil samples for the Site COCs (BTEX and DEHP) will be developed to assist in tracking source removal progress. Significant decreases in PID readings from the known baseline source area (designated as 0+0' and centerline; excavation starting location) as well as PID readings below the estimated cleanup criteria (based on the developed PID/laboratory correlation) will be used as an indication that residual source area material has been effectively removed. Excavation activities will be suspended once all excavation perimeter observations and PID readings indicate that source area soils containing concentrations of COCs above cleanup criteria have been removed. The lateral extent of the excavation and field screening PID reading locations will be properly documented using a hand held Trimble GPS unit.

Confirmation soil sampling and potential excavation step-outs and sampling contingency procedures are described in Sections 9.9.3 and 9.10.2, respectively, of this document.

Soils excavated will be loaded into an articulated dump truck and hauled to a staging area located on the North end of the construction area. Soil will be segregated, and oversized demolition material (material from the Building 9 demolition) will be stockpiled separately for crushing and disposal. Clean material excavated from the sloped portion of the excavation will be stockpiled for later use as backfill and impacted soil will be stockpiled for subsequent characterization and disposal.

Composite sampling of the BTEX and DEHP impacted soil from the MW19HS1 area will be collected for disposal approval. The waste characterization method will be confirmed to conform to the March 2005 Uniform Federal Policy for Quality Assurance Project Plans (UFP-QAPP). Methods used will be described in the Remedial Action Report Addendum following the completion of the soil remedy for the MW19HS1 residual source AOC. Following proper analytical review and approval, the impacted soil will be loaded into licensed dump trucks and hauled to a licensed disposal facility.

9.9.3 Confirmatory Sampling

To assure that all soils have been removed to a level below N.J.A.C 7:26D, Appendix I, Table 1B, Non Residential Direct Contact Soil Health Based Criteria and Soil Remediation Standards, initial confirmatory sampling will be conducted after excavation to the maximum depth achievable and estimated lateral extent from field screening has been achieved. Post remedial confirmation sampling will be conducted pursuant to N.J.A.C. 7:26E-3.3 through 3.12 and 4.1. In accordance with N.J.A.C. 7:26E-3.3 through

3.12 and 4.1, one (1) sample from the bottom of each sidewall (or biased to locations along the sidewall that may contain elevated concentrations of COCs based on field screening results) for no more than 20 linear feet of sidewall will be collected. Following USEPA recommendations in their December 21, 2009 comment letter, post excavation samples will also be collected at the midpoint between the surface and bottom of the excavation every 20 linear feet. Due to the proposed excavation extending to the water table, no samples from the excavation bottom will be collected as part of the remediation. Proposed sidewall confirmatory sample locations are presented on Figure 20.

Samples will be laboratory analyzed for the Site organic COCs (BTEX and DEHP). All sampling will be conducted in accordance with the QAPP. In the event that confirmation sampling points exceed cleanup criteria, step-out excavation and sampling contingency measures described in Section 9.10.2 will be implemented.

9.10 Remedial Construction Contingencies

This addendum has taken into consideration normal anticipated events and climatic conditions in the approach presented. No one can anticipate all acts of nature or encountering of unknown conditions, particularly in the subsurface. There is always the potential for rare or infrequent events, and general contingencies for some of these are presented below.

9.10.1 Additional Lateral and Vertical Excavation

If additional excavation is required to the Northwest of the planned limits of construction, actions including the removal of permanent fencing, installation of temporary fencing adjacent to Ross Street, and the clearing of trees impacted by the expanded limits of excavation will be conducted to perform the additional excavation. Special care will be taken to ensure that the current condition of Ross Street is not affected.

Based on recent historical water elevation data from monitoring well MW-19, it is anticipated that vertical excavation will not exceed a depth of 12-feet (approx. elev. 626-feet). If the water table elevation is lower than anticipated during construction, vertical excavation will extend further into source area smear zone until the water table is reached to maximize removal of source material. Any additional vertical excavation will be appropriately documented.

9.10.2 Step-Out Excavations and Reconfirmation Sampling

Any area where a confirmation sampling point exceeds the N.J.A.C 7:26D, Appendix I, Table 1B, Non Residential Direct Contact Soil Health Based Criteria and Soil Remediation Standards for BTEX or DEHP, additional soil will be excavated from the excavation sidewall (approximately 3 to 5 feet into native soil) with the extent of excavation driven by visual, olfactory, and PID measurements throughout the excavation process. The lateral limits of the step-out will be defined as the midpoints between the point of exceedance and the nearest points that meet criteria. Field screening methods using a PID (as described in Section 9.9.2) will be utilized to monitor the step-out excavation and residual material removal.

Reconfirmation sampling using the same methods described in Section 9.9.3 will be performed to verify that the remediation criteria for that area(s) has been achieved.

9.10.3 Dust

Site construction activities may create issues with dust. Most dust would be expected to result from truck traffic traversing a dry/fine particulate surface material across the Site and not from airborne contents from the truck trailers, as truck trailers exiting the Site will be covered. In the event that wind-blown dust becomes a problem during operations, water or dust suppressants will be applied to on-site traffic areas.

9.10.4 Odor

Odor will be monitored in accordance with the established Site health and safety plan for air monitoring. Odor is anticipated to be a problem if (1) an excessive source area is encountered and exposed at one time, (2) air temperatures become high, or (3) wind direction is consistently toward residences on the north side of Ross Street. In the event that odors become a problem, the size of active excavation areas will be decreased and appropriate odor suppressants will be applied to the sides and bottom of the excavation.

9.10.5 Storm Event and Excavation Flooding

In the event of excessive storm events are encountered, temporary soil berms will be constructed around the excavation to prevent collection and spill over of runoff into the exposed excavation. If storm water accumulates within the excavation and does not subside within a reasonable time, response measure such as dewatering into a temporary storage ("frac") tank for disposal will be considered.

9.10.6 Events Arising from Unforeseen Subsurface Conditions

Should any underground storage tanks or other waste-containing structures be encountered within an excavation, the following actions will be taken:

– Securing that area of the excavation to avoid unauthorized access by personnel or their equipment
– Acquisition of an appropriate emergency response contractor (if required)
– Notification of authorities (as required).

Should any drains, sewers, or other piping infrastructure be encountered in the excavation, the discharge of fluids to/from the excavation will be blocked by temporarily plugging the exposed line. Following proper identification, sequential excavation of the line will then be accomplished. If the line is not active, the segment will be permanently plugged. If the line is active, it will be redirected and reconnected into the Site's infrastructure.

9.11 Backfill and Rough Grading

Once excavation has been completed the area will be backfilled to the approximate pre-existing grade as described below and shown in Figure 21 (Detail 1).

- The bottom 3-feet of the excavation immediately above the current water table will be backfilled with imported gravel fill material to create a permeable layer to facilitate groundwater polishing (if required). A geofabric layer will be placed atop the gravel fill prior to placement of the subsequent fill material.
- Eight feet of clean crushed concrete from Building 9 demolition will be placed and compacted over the gravel fill layer in 12-inch maximum lifts. A geofabric layer will be placed atop the crushed concrete prior to placement top soil. Building 9 demolition concrete will be crushed to a 2-inch minus angular material.
- One foot of topsoil will be placed over the reused crushed concrete. Topsoil removed and stockpiled prior to the excavation as well as imported material from off-site will be utilized as needed to achieve the desired final grade. All imported or reused material (i.e., existing or imported topsoil and/or crushed concrete from the Building 9 demolition) will be certified clean prior to use at the Site. All certificates will be included in the Remedial Action Report Addendum following completion of the soil remedy for both the MW19HS1 and MW-30 residual source AOCs.
- All areas disturbed during the remediation activities will be graded, seeded, and mulched as the weather conditions allow.
- Future access for monitoring groundwater, or smear zone and/or groundwater remediation will not be precluded by the proposed backfill design, materials, and methods.

9.12 Demobilization and Clean-up

Once excavation and restoration activities have been completed all temporary support equipment and structures will be removed.

9.13 Potential End Use Plan and Construction

A final end use plan for the MW19HS1 area has not been identified at the time of this addendum submittal. All areas disturbed during the remediation activities will be graded and seeded allowing for a variety of future end use plans.

Section 10
Costs and Schedule

A proposed schedule to implement the scope of work outlined in this work plan addendum is presented in Appendix I. Tables outlining the estimated costs to implement the MW-30 and the MW19HS1 scopes of work outlined in this addendum are presented in Appendix J.

Section 11
Community Relations

USEPA and LEC are developing a Community Involvement Plan (CIP) for the Site. The CIP will define the overall approach to community involvement and information sharing regarding all aspects of Site work moving forward. In accordance with CIP and N.J.A.C 7:26E-1.4 (Notification and Public Outreach) requirements , USEPA will be issuing a fact sheet to residents and companies in the vicinity of the Site, informing them of the upcoming field work outlined in this addendum. In addition, 3ft by 2ft signs will be posted on the Ross Street and Rails-To-Trails fences containing project contact information. USEPA expects to send out the fact sheet at least two weeks prior to the commencement of field work. The signs will be posted in September 2009.

Tables

TABLE 1
Dayco Corporation/L.E. Carpenter Superfund Site
USEPA UAO and SOW Action Item Checklist

ACTION ITEM #	COMPLETION TIMEFRAME (Calendar Days from UAO Effective Date)	ACTION ITEM DUE DATE	OVERALL ACTION ITEMS - *UAO Section Heading (associated paragraph reference)* (3)(4)	RESPONSIBLE PARTY	ACTION ITEM COMPLETED	COMPLETED BY	COMPLETED WHEN
1	--	08/06/09	Effective Date of the USEPA UAO and SOW	USEPA	✓	USEPA/LEC/RMT	08/06/09
2	7 days	08/13/09	*Notice of Intent to Comply (paragraph 34)* : Respondent shall provide written notice to EPA's Remedial Project Manager and Assistance Regional Counsel for the Site stating whether it will comply with the terms of the Order.	LEC	✓	LEC	08/13/09
3	5 days - or on day services retained, whichever date occurs later	TBD	*Parties Bound (paragraph 36):* Respondent shall provide a copy of Order to each contractor, subcontractor, laboratory, or consultant retained to perform any work under the Order within 5 days of the effective date of the Order, or on the date services are retained, whichever date occurs later.	RMT and LEC	✓	RMT and LEC	Real Time (5)
4	5 days - following receipt of approved errata sheet or amended UAO (1)	09/14/09	*Parties Bound (paragraph 37):* With respect to real property Respondent owns within the site, record a copy of the Order in the appropriate governmental office where land ownership and transfer records are filed or recorded. Ensure the recording of the Order is indexed to the title of Respondent's real property at the Site.	LEC	✓	LEC	09/28/09
5	7 days (2)	08/13/09	*Work to be Performed (paragraph 40):* Identify a Supervising Contractor and submit a copy of their Quality Management Plan (QMP).	RMT	✓	RMT	08/10/09
6	7 days (2)	08/13/09	*Work to be Performed (paragraph 41):* Identify a Project Coordinator.	RMT	✓	RMT	08/10/09
7	5 days - following completion of Action Item #4 above	09/19/09	*Parties Bound (paragraph 37):* Send notice to EPA after making recording and indexing stated in action item #4 above	LEC	✓	RMT (7)	12/11/09
8	By the 8th of every month	09/08/09	*Progress Reports (paragraph 61):* 1st Monthly Progress Report Draft to LEC	RMT	✓	RMT	8th of each month
9	30 days	09/05/09	*Assurance of Ability to Complete Work (paragraph 81):* Demonstrate ability to complete the Work required by this Order and to pay all claims that arise from the performance of the Work (Financial Assurity). EPA added as a beneficiary on Letter of Credit.	LEC	✓	LEC	Nov-2009
10	30 days	09/05/09	*SOW - IV. Remedial Action (letter B):* Submit an addendum to the NJDEP approved "Remedial Action Work Plan for Source Reduction", RMT, Inc., 2004.	RMT	✓	RMT	09/03/09
11	By the 10th of every month	09/10/09	*Progress Reports (paragraph 61):* Provide monthly progress reports with actions and activities undertaken pursuant to this Order. Must be submitted on or before the 10th day of each month. Monthly Progress Report Final to EPA [pdf electronic is acceptable]. 1st Progress Report submitted 09/09/09	RMT	✓	RMT	10th of each month
12	60 days	10/05/09	Access to Site Not Owned by Respondent (paragraph 72): Obtain site access agreements from parties other than those bound by this Order to provide access for EPA, its contractors and oversight officials, the state and its contractors, and Respondent and Respondent's authorized representatives and contractors (6)	LEC	✓	LEC	2005
13	90 days	11/04/09	*Record Preservation (paragraph 78):* Respondent shall submit a written certification to EPA's RPM and Site Attorney that it has not altered, mutilated, discarded, destroyed or otherwise disposed of any records, documents, or other information relating to its potential liability with regard to the site since notification of potential liability by the United States or the State or the filing of suit against it regarding the Site.	LEC	✓	LEC	11/27/09
14	45 days	10/22/09	*SOW:* EPA review and approval of the 2004 RAWP Addendum [assume 45 calendar days]	USEPA	✓	USEPA	12/30/09
15	15 days following EPA approval in item #14	01/14/10	*SOW - IV. Remedial Action (letter A):* Respondent shall notify EPA in writing the name & qualifications of the construction contractor(s) proposed to perform the Work and submit a copy of their QMP. If EPA disapproves the selection of any contractor, Respondent shall submit a list of contractors that would be acceptable w/in 15 days of receipt of EPA's disapproval. Per phone conference on 8/3/09 only RMT and Analytical Laboratories are required to submit QMPs.	LEC and RMT	✓	RMT	01/12/10
16	7 days prior to commencing work	01/04/10	*Assurance of Ability to Complete Work (paragraph 82):* Submit to EPA certification that Respondent or its contractors and subcontractors have adequate insurance coverage or have indemnification for liabilities for injuries or damages to persons or property which may result from the activities to be conducted by or on behalf of Respondent pursuant to this Order.	LEC and RMT	✓	RMT	01/12/10
17	As outlined in the 2004 RAWP Addendum Schedule	01/11/10	*SOW - IV. Remedial Action (letter D)* : Perform RA in accordance with the final addendum to the RAWP and the associated project schedule.	RMT	✓	RMT	01/11/10

TABLE 1
Dayco Corporation/L.E. Carpenter Superfund Site
USEPA UAO and SOW Action Item Checklist

ACTION ITEM #	COMPLETION TIMEFRAME (Calendar Days from UAO Effective Date)	ACTION ITEM DUE DATE	SOIL REMEDIAL ACTION ITEMS (MW19HS1)	RESPONSIBLE PARTY	ACTION ITEM COMPLETED	COMPLETED BY	COMPLETED WHEN
			MW19HS1 Area Soil Remediation completed between the dates of January 11, 2010 and April 23, 2010	**RMT**	✓	**RMT**	**04/23/10**
18a	**14 days prior to soil remedy completion**	**02/23/10**	***Remedial Action (UAO Paragraph 46) & SOW Section V.A.):*** **Respondent and contractor(s) will be available to accompany EPA personnel and/or representative on a pre-final inspection in accordance with Section VI of the SOW**	**LEC and RMT**	✓	**RMT**	**2/15/10 (8) (9)**
19a	**7 days prior to item #18a**	**02/16/10**	***Pre-Final and Final Inspections, Soil Remedial Action Report, Notice of Construction Completion (Ref. SOW Section V.A):*** **Respondent shall provide documentation that the Performance Standards related to the soil remedy have been met or will be met at the completion of construction.**	**LEC and RMT**	✓	**RMT**	**2/15/10 (8) (9)**
20a	**14 days after completion of the construction of corrective measures**	**05/07/10**	***SOW - V. Pre-Final and Final Inspections, Soil Remedial Action Report, Notice of Construction Completion (second letter A):*** **If EPA requires corrective measures following item #18, Respondent and their contractor(s) shall be available to accompany EPA or their rep. on an inspection following completion of the construction of the corrective measures.**	**LEC and RMT**	✓	**RMT**	**5/13/10 (8) (9)**
21a	**Within 21 days of completion of all work**	**05/14/10 (9)**	**Remedial Action (paragraph 47): Respondent shall schedule and conduct a final inspection in accordance with Section V.C of the SOW.** ***NOTE: Final inspection will be perfromed as part of the RAR Addendum review process (Ref. Action item 22a).***	**LEC and RMT**	✓	**USEPA**	**5/13/10 (9)**
22a	**45 days**	**07/30/10 (9)**	***Remedial Action (paragraph 48):*** **After receipt of EPA's determination that soil remedy is complete Respondent shall submit a draft RA report that meets requirements set forth in Section V.E of the SOW.** ***NOTE: RAR Addednum submitted July 20, 2010.***	**LEC and RMT**	✓	**RMT**	**07/20/10**
23a	14 days of completion of final field inspection/corrective action implementation	TBD (9)	*SOW - V. Pre-Final and Final Inspections, Soil Remedial Action Report, Notice of Construction Completion (letter C):* Submit inspection and corrective action reports, if any, within 14 days of completion of field inspection/corrective action implementation	LEC and TRC			

ACTION ITEM #	COMPLETION TIMEFRAME (Calendar Days from UAO Effective Date)	ACTION ITEM DUE DATE	SOIL REMEDIAL ACTION ITEMS (MW-30)	RESPONSIBLE PARTY	ACTION ITEM COMPLETED	COMPLETED BY	COMPLETED WHEN
			MW-30 Area Soil Remediation	**TRC**			
18b	14 days prior to soil remedy completion	TBD	*Remedial Action (paragraph 46):* Respondent and contractor(s) will be available to accompany EPA personnel and/or representative on a pre-final inspection in accordance with Section VI of the SOW	LEC and TRC			
19b	7 days prior to item #18b	TBD	*SOW - V. Pre-Final and Final Inspections, Soil Remedial Action Report, Notice of Construction Completion (letter A):* Respondent shall provide documentation that the Performance Standards related to the soil remedy have been met or will be met at the completion of construction.	LEC and TRC			
20b	14 days after completion of the construction of corrective measures	TBD	*SOW - V. Pre-Final and Final Inspections, Soil Remedial Action Report, Notice of Construction Completion (second letter A):* If EPA requires corrective measures following item #18, Respondent and their contractor(s) shall be available to accompany EPA or their rep. on an inspection following completion of the construction of the corrective measures.	LEC and TRC			
20b	Within 21 days of completion of all work	TBD	*Remedial Action (paragraph 47)* : Respondent shall schedule and conduct a final inspection in accordance with Section V.C of the SOW	LEC and TRC			
22b	14 days of completion of field inspection/corrective action implementation	TBD	*SOW - V. Pre-Final and Final Inspections, Soil Remedial Action Report, Notice of Construction Completion (letter C):* Submit inspection and corrective action reports, if any, within 14 days of completion of field inspection/corrective action implementation	LEC and TRC			
23b	45 days	TBD	*Remedial Action (paragraph 48):* After receipt of EPA's determination that soil remedy is complete Respondent shall submit a draft RA report that meets requirements set forth in Section V.E of the SOW	LEC and TRC			

ACTION ITEM #	COMPLETION TIMEFRAME (Calendar Days from UAO Effective Date)	ACTION ITEM DUE DATE	GROUNDWATER MNA EVALUATION ACTION ITEMS (SITE WIDE)	RESPONSIBLE PARTY	ACTION ITEM COMPLETED	COMPLETED BY	COMPLETED WHEN
24	21 days of receipt of sample results from final sampling event	TBD	*SOW - VI. Groundwater Monitored Natural Attenuation Evaluation (letter B):* Submit to EPA a Site-Wide Groundwater Monitored Natural Attenuation Report summarizing the results of the effort and its findings.	TRC			
25	10 days following EPA's request to prepare a FFS	TBD	*SOW - VII. Focused Feasibility Study:* If EPA determines from item #24 that MNA is a viable alternative to address contaminated groundwater at the site, EPA will request the preparation of a FFS. Respondent will submit a schedule for the preparation of the FFS to EPA within 10 days of this request.	TRC			
26	60 days	TBD	*SOW - VII. Focused Feasibility Study (letter C):* Submit a draft FFS report to EPA following submittal of item #25.	TRC			
27	30 days after item #26	TBD	*SOW - VII. Focused Feasibility Study (letter C):* Meet with EPA to summarize and discuss findings of the draft FFS Report and EPA's preliminary comments and concerns.	LEC and TRC			
28	30 days after receiving EPA's written comments	TBD	*SOW - VII. Focused Feasibility Study (letter C):* Amend and submit a revised FFS Report.	TRC			

TABLE 1
Dayco Corporation/L.E. Carpenter Superfund Site
USEPA UAO and SOW Action Item Checklist

ACTION ITEM #	COMPLETION TIMEFRAME (Calendar Days from UAO Effective Date)	ACTION ITEM DUE DATE	CONTINGENT ACTION ITEMS (SITE WIDE)	RESPONSIBLE PARTY	ACTION ITEM COMPLETED	COMPLETED BY	COMPLETED WHEN
29	30 days from receipt of notice from EPA	TBD	*Failure to Attain Performance Standards (paragraph 51):* If EPA determines that additional response activities are necessary to meet any applicable Performance Standards, the Respondent shall submit, for approval by EPA, a work plan for the additional response activities.	TRC			
30	30 days from receipt of notice from EPA	TBD	*Additional Response Actions (paragraph 54):* If EPA determines that additional response activities are necessary to protect human health and the environment, the Respondent shall submit a work plan for the response activities to EPA for review and approval.	TRC			
31	7 days after receipt of EPA's request (item #30)	TBD	*Additional Response Actions (paragraph 54):* If EPA determines that additional response activities are necessary to protect human health and the environment, the Respondent shall submit a work plan for the response activities to EPA for review and approval.	TRC			
32	21 days from receipt of disapproval notice/request for modification	TBD	*EPA Review of Submissions (paragraph 59):* Respondent shall correct the deficiencies and resubmit the report, plan, or other item for approval.	TRC			
33	5 days prior to new Project Coordinator	TBD	*Remedial Project Manager (paragraph 71):* Provide written notice to EPA of the name and qualifications of the new Respondent Project Coordinator. Selection is subject to EPA approval.	LEC and TRC			
34	48 hours	TBD	*Delay In Performance (paragraph 80):* Notify EPA's RPM by telephone of anticipated delay in performing any requirement of this Order.	LEC and TRC			
35	5 business days following item #34	TBD	*Delay In Performance (paragraph 80):* Provide written notification describing the nature and justification of the delay (described in item #34) in addition to the measure planned and taken to minimize the delay.	LEC and TRC			
36	60 days prior to transfer	TBD	*Parties Bound (paragraph 38):* Submit a true and correct copy of transfer document(s) to EPA identifying the transferee by name, principal business address and effective date of transfer.	LEC			
37	28 days prior to event	TBD	*QA, Sampling and Data Analysis (paragraph 63):* Notify EPA in advance of any sample collection activity.	TRC			
38	10 years	08/04/19	*Record Preservation (paragraph 77):* Respondent shall preserve and retain all records and documents in its or any of their contractors possession/control that relate in any manner to the Site.	LEC and TRC			
39	90 days prior to record or document destruction following item #38	TBD	*Record Preservation (paragraph 77):* Following the preservation period outlined in item #38, Respondent shall notify the US prior to the destruction of any such records/documents.	LEC			
40	Prior to off-site shipments of hazardous substances	--	*Remedial Action (paragraph 45):* Provide written notification to appropriate state environmental official in receiving state and to EPA's RPM (See UAO for detailed notification requirements). Does not apply when total volume of all shipments from the Site to the State will not exceed 10 cubic yards.	LEC and TRC			

Notes
1) LEC granted an extension on this date as outlined in USEPA email dated August 3, 2009. Emailed pdf copies of Amended UAO received 9/8/09
2) Identification of Supervising Contractor and Project Coordinator should be presented on LEC letterhead
3) All requirements and descriptions summarized in this column are UAO driven and referenced with the exception of those stating "SOW"
4) Rows shown in **Bold** are items that have been completed
5) This item will be completed when any contractor, subcontractor, laboratory, or consultant are retained to perform services related to completion of the Statement of Work (SOW)
Dallas Contracting, EWMI/Rapid Response, JFNew, Trace Labs and Denis Sklar Surveying were copied on the UAO in a Jan 5, 2010 email. COIs and SOQs were requested (Ref. Item 15)
6) Access agreements between LEC and Air Products and Wharton Enterprises were finalized in 2005 prior to the Source Reduction Remediation
7) EPA notice that LEC recorded a copy of the UAO with Morris County was provided in an email from RMT dated 12/11/09 and in the November 2009 Progress Report.
8) Action item completed as part of Progress Report No. 4 dated Feb 15, 2010. USEPA personnel on-site for inspection Feb 1 & 4, 2010 (to split excavation confirmatory soil samples)
9) As outlined in the USEPA email dated 5/13/10, USEPA will only perfrom a final inspection as part of the MW19HS1 RAR Addendum review process

TABLE 2
Dayco Corporation/L.E. Carpenter Superfund Site
Project Contact List

NAME	PROJECT RESPONSIBILITY	PROJECT AUTHORITY	COMPANY NAME & ADDRESS	CONTACT INFORMATION
Ernie Schaub	Project Manager	Owner	**L.E. Carpenter & Company** 33587 Walker Road Avon Lake, OH 44012	(440) 930-3611 Phone (440) 930-1063 Fax (440) 665-0328 Mobile ernie.schaub@polyone.com
Richard Hahn	Internal Council/Secretary	Owner	**L.E. Carpenter & Company** 33587 Walker Road Avon Lake, OH 44012	(440) 930-1361 Phone (440) 930-1179 Fax richard.hahn@polyone.com
Karen C. Saucier, PhD	Project Coordinator	Supervising Contractor	**TRC Environmental Corporation** 30 Patewood Drive, Suite 300 Greenville, SC 29615	(864) 234-9307 Phone (864) 281-0288 Fax (864) 787-6638 Mobile ksaucier@trcsolutions.com
James J. Dexter, C.P.G.	Senior Project Hydrogeologist/Geologist	Certifying Geologist (Certificate # 7844)	**TRC Environmental Corporation** 2025 E. Beltline Ave. SE, Suite 402 Grand Rapids, MI 49546	(616) 975-5415, ext. 1407 Phone (616) 975-1098 Fax (616) 915-3658 Mobile jdexter@trcsolutions.com
Dave McKenzie	Senior Project Engineer	NA	**TRC Environmental Corporation** 3754 Ranchero Drive Ann Arbor, MI 48108	(734) 971-7080, ext. 7114 Phone (734) 971-9022 Fax (734) 904-3316 Mobile dmckenzie@trcsolutions.com
Nidal M. Rabah, PhD, P.E.	Lead Technical QA/QC	Certifying Engineer (License # 24GE04577700)	**TRC Environmental Corporation** 57 East Willow Street Millburn, NJ 07041	(973) 564-6006, ext. 250 (973) 564-6131 Fax (973) 902-3016 Mobile nrabah@trcsolutions.com
Barry Culp, P.G.	Technical Coordinator	NA	**TRC Environmental Corporation** 30 Patewood Drive, Suite 300 Greenville, SC 29615	(864) 234-9350 Phone (864) 281-0288 Fax (864) 270-0510 Mobile bculp@trcsolutions.com
Dave Condon	Site Contact	NA	**L.E. Carpenter & Company** 170 North Main Street P.O. Box 11 Wharton, NJ 07885	(973) 366-1050 Phone (973) 366-5837 Fax
Barbara Weyandt	Analytical Laboratory Services	NA	**Lancaster Laboratories, Inc.** 2425 New Holland Pike Lancaster, PA 17601	(717) 656-2300, ext. 1576 Phone (717) 656-6766 Fax bweyandt@lancasterlabs.com
David Pohwat	Waste Broker/Contractor/ Emergancy Response	NA	**Environmental Waste Minimization/Rapid Respinse Inc.** 14 Brick Kiln Ct. Northhampton, PA 18067	(484) 275-6930 Phone (484) 275-6970 Fax (484) 357-3123 Mobile dpohwat@ewmi-info.com
Dennis W. Sklar, PLS	Professional Surveyor	NA	**Dennis W. Sklar, Inc.** 9211 Woodenbridge Rd Philadelphia, PA 19114	(215) 268-7988 Phone (215) 268-7966 Fax (215) 651-6791 Mobile dwspls@comcast.net
Dennis Robins	Professional Driller	NA	**Boart Longyear Environmental & Infrastructure Drilling Services** 6215 Lehman Drive Flint, MI 48507	(810) 877-7176 Phone (810) 877-7156 Fax (810) 577-2665 Mobile drobins@boartlongyear.com
Kelly Rice	Wetland Specialist	NA	**JFNew** 11181 Marwill Avenue West Olive, MI 49460	(616) 847-1680 Phone (616) 847-9970 Fax (616) 502-0627 Mobile krice@jfnew.com
Patricia Simmons Pierre	USEPA Remedial Project Manager (RPM)	Lead Regulator	**United States Environmental Protection Agency (USEPA)** 290 Broadway Floor 19 New York, NY 10007	(212) 637-3865 Phone (212) 637-3966 Fax pierre.patricia@epa.gov
Glenn Savary	NJDEP Case Manager	Regulator	**New Jersey Department of Environmental Protection (NJDEP)** Bureau of Case Management 401 East State Street P.O. Box 028 Trenton, NJ 08626	(609) 633-1455 Phone (609) 633-1439 Fax (609) 937-1633 Mobile Glenn.Savary@dep.state.nj.us
Gwen Zervas, P.E.	NJDEP Section Chief	Regulator	**New Jersey Department of Environmental Protection (NJDEP)** Bureau of Case Management 401 East State Street P.O. Box 028 Trenton, NJ 08626	(609) 633-7261 Phone (609) 633-1439 Fax
Jon Rheinhardt	Borough of Wharton Point of Contact & Borough of Wharton CFO	NA	**Borough of Wharton** Wharton Municipal Building 10 Roberts Street Wharton, NJ 07885	(973) 361 8444, ext. 11 Phone (973) 361-5281 Fax (973) 713-5518 Mobile Jrheinhardt@whartonnj.com

TABLE 3
Dayco Corporation/L.E. Carpenter Superfund Site
Quarterly Groundwater Elevations

1st Quarter 2011

WELL LOCATION	MONITORING DEVICE TYPE	PROFESSIONAL SURVEY INFORMATION [2]							QUARTERLY MEASUREMENT INFORMATION						
		BASELINE LOCATION (FT) NJ State Plane Coordinates		GEODETIC LOCATION		ELEVATION (FT. MSL)									
		(Y) North	(X) East	LATITUDE	LONGITUDE	GROUND [6]	OUTER CASING	INNER WELL CASING	MEAS. DATE	PRODUCT DEPTH	WATER DEPTH	PRODUCT ELEVATION	WATER ELEVATION	PRODUCT THICKNESS (FT)	CORRECTED WATER ELEVATION
GEI-3I	Piezometer	754311.79	470453.7	40^0 54' 14.8"	74^0 34' 43.7"	636.96	639.39	639.25	14-Mar-11		8.98	--	630.27		
MW-8	Monitoring Well	754099.29	471251.06	40^0 54' 12.7"	74^0 34' 33.3"	627.39	629.96	628.19	14-Mar-11		1.55	--	626.64		
MW-9	Monitoring Well	754075.94	471111.03	40^0 54' 12.5"	74^0 34' 35.1"	628.61	631.09	629.58	14-Mar-11		1.90	--	627.68		
MW-12S(R)	Monitoring Well	754055.97	471042.34	40^0 54' 12.3"	74^0 34' 35.9"	631.57	634.26	633.73	14-Mar-11		6.02	--	627.71		
MW-13S	Monitoring Well	754353.97	471370.04	40^0 54' 15.3"	74^0 34' 31.7"	627.74	630.80	630.63	14-Mar-11		3.57	--	627.06		
MW-13S(R)	Monitoring Well	754333.07	471365.71	40^0 54' 15.0"	74^0 34' 31.8"	627.66	630.36	629.99	14-Mar-11		2.54	--	627.45		
MW-13I	Monitoring Well	754337.8	471360.31	40^0 54' 15.1"	74^0 34' 31.9"	627.76	630.28	630.06	14-Mar-11		2.35	--	627.71		
MW-15S	Monitoring Well	754326.58	470891.83	40^0 54' 15.0"	74^0 34' 38.0"	634.23	636.43	636.17	14-Mar-11		7.51	--	628.66		
MW-15I	Monitoring Well	754325.8	470901.47	40^0 54' 15.0"	74^0 34' 37.9"	634.14	636.28	636.06	14-Mar-11		7.41	--	628.65		
MW-17(S)	Monitoring Well	754109.68	470759.85	40^0 54' 12.8"	74^0 34' 39.7"	632.35	634.32	634.19	14-Mar-11		5.05	--	629.14		
MW-18S	Monitoring Well	754677.95	471117.26	40^0 54' 18.4"	74^0 34' 35.0"	627.62	630.88	630.66	Abandoned November 2010						
MW-18I	Monitoring Well	754675.11	471106.07	40^0 54' 18.4"	74^0 34' 35.2"	627.75	630.59	630.44	Abandoned November 2010						
MW-19R	Monitoring Well	754533.15	470461.18	40^0 54' 17.4"	74^0 34' 42.2"	635.19	635.31	634.95	14-Mar-11		4.73	--	630.22		
MW-19-5R	Monitoring Well	754565.77	470474.05	40^0 54' 17.7"	74^0 34' 42.0"	635.51	635.54	635.20	14-Mar-11		5.46	--	629.74		
MW-19-6R	Monitoring Well	754574.70	470439.39	40^0 54' 17.8"	74^0 34' 42.4"	635.87	635.85	635.46	14-Mar-11		5.70	--	629.76		
MW-19-7R	Monitoring Well	754591.32	470496.36	40^0 54' 17.9"	74^0 34' 41.7"	635.30	635.36	634.97	14-Mar-11		5.43	--	629.54		
MW-19-8	Monitoring Well	754617.50	470493.62	40^0 54' 18.2"	74^0 34' 41.7"	635.57	635.52	635.11	14-Mar-11		5.59	--	629.52		
MW-19-9D	Monitoring Well	754590	470442	40^0 54' 17.9"	74^0 34' 42.4"	636.39	636.41	636.10	Abandoned November 2010						
MW-19-12	Monitoring Well	754627.53	470529.72	40^0 54' 18.3"	74^0 34' 41.3"	634.93	634.93	634.46	14-Mar-11		4.98	--	629.48		
MW-19-13	Monitoring Well	754579.37	470529.59	40^0 54' 17.8"	74^0 34' 41.3"	634.87	634.81	634.33	14-Mar-11		4.57	--	629.76		
MW-19-14	Monitoring Well	754533.49	470484.56	40^0 54' 17.4"	74^0 34' 41.9"	635.07	635.14	634.82	14-Mar-11		4.59	--	630.23		
MW-19-15	Monitoring Well	754486.40	470446.05	40^0 54' 16.9"	74^0 34' 42.4"	635.56	635.57	635.26	14-Mar-11		4.94	--	630.32		
MW-19-16	Monitoring Well	754505.02	470534.21	40^0 54' 17.1"	74^0 34' 41.2"	634.66	634.67	634.35	14-Mar-11		4.09	--	630.26		
MW-19-17	Monitoring Well	754602.50	470442.02	40^0 54' 18.1"	74^0 34' 42.4"	636.26	636.25	635.85	14-Mar-11		6.20	--	629.65		
MW-21 [3]	Monitoring Well	754240.97	471645.78	40^0 54' 14.1"	74^0 34' 28.2"	624.57	628.49	628.20	14-Mar-11		1.15	--	627.05		
MW-25(R) [3]	Monitoring Well	754201.83	471518.21	40^0 54' 13.7"	74^0 34' 29.8"	624.65	626.77	626.62	14-Mar-11		2.31	--	624.31		
MW-27s	Monitoring Well	754253.78	470672.69	40^0 54' 14.613"	74^0 34' 39.402"	635.82	635.78	635.07	14-Mar-11		5.84	--	629.23		
MW-28S	Monitoring Well	754243.26	471034.34	40^0 54' 14.512"	74^0 34' 34.692"	628.20	631.28	631.14	14-Mar-11		3.07	--	628.07		
MW-28I	Monitoring Well	754242.87	471031.19	40^0 54' 14.508"	74^0 34' 34.733"	628.25	631.20	631.04	14-Mar-11		2.96	--	628.08		
MW-29S	Monitoring Well	754411.14	471187.85	40^0 54' 16.172"	74^0 34' 32.694"	629.94	632.83	632.66	14-Mar-11		5.20	--	627.46		
MW-30S	Monitoring Well	754281.65	471265.12	40^0 54' 14.893"	74^0 34' 31.686"	624.99	628.24	628.24	14-Mar-11		0.98	--	627.26		
MW-30I	Monitoring Well	754286.42	471263.15	40^0 54' 14.941"	74^0 34' 31.712"	625.14	628.15	628.01	14-Mar-11		0.70	--	627.31		
MW-30D	Monitoring Well	754290.05	471261.2	40^0 54' 14.976"	74^0 34' 31.737"	625.20	628.22	628.02	14-Mar-11		0.58	--	627.44		
MW-31S	Monitoring Well	754241.65	471341.5	40^0 54' 14.499"	74^0 34' 30.691"	627.94	630.00	629.82	14-Mar-11		4.65	--	625.17		
MW-32S	Monitoring Well	754207.08	471359.83	40^0 54' 14.157"	74^0 34' 30.452"	628.15	630.33	630.18	14-Mar-11		4.86	--	625.32		
MW-33S	Monitoring Well	754170.51	471311.04	40^0 54' 13.796"	74^0 34' 31.087"	628.85	631.06	630.91	14-Mar-11		5.11	--	625.80		
MW-34S	Monitoring Well	754178.83	471399.49	40^0 54' 13.879"	74^0 34' 29.935"	628.07	629.97	629.93	14-Mar-11		4.79	--	625.14		
MW-35S	Monitoring Well	754179.62	471445.17	40^0 54' 13.887"	74^0 34' 29.340"	627.43	629.59	629.19	14-Mar-11		3.95	--	625.24		
SG-R2 [3]	Rockaway River Monitoring Point	754056.10	470946.46	40^0 54' 12.662"	74^0 34' 35.834"	629.41	-	-	14-Mar-11		1.10	--	628.31		

1st Quarter 2011

TABLE 3
Dayco Corporation/L.E. Carpenter Superfund Site
Quarterly Groundwater Elevations

WELL LOCATION	MONITORING DEVICE TYPE	PROFESSIONAL SURVEY INFORMATION [2]							QUARTERLY MEASUREMENT INFORMATION						
		BASELINE LOCATION (FT) NJ State Plane Coordinates		GEODETIC LOCATION		ELEVATION (FT. MSL)									
		(Y) North	(X) East	LATITUDE	LONGITUDE	GROUND [6]	OUTER CASING	INNER WELL CASING	MEAS. DATE	PRODUCT DEPTH	WATER DEPTH	PRODUCT ELEVATION	WATER ELEVATION	PRODUCT THICKNESS (FT)	CORRECTED WATER ELEVATION
SW-R-1 [4]	Rockaway River Monitoring Point	754125.56	471523.00	40^0 54' 13.353"	74^0 34' 28.326"	625.87	-	-	14-Mar-11		1.56	--	624.31		
SW-R-2 [4]	Rockaway River Monitoring Point	754112.82	471426.51	40^0 54' 13.226"	74^0 34' 29.582"	626.54	-	-	14-Mar-11		1.49	--	625.05		
SW-R-3 [4]	Rockaway River Monitoring Point	754149.30	471368.76	40^0 54' 13.586"	74^0 34' 30.335"	626.25	-	-	14-Mar-11		0.90	--	625.35		
SW-R-4 [4]	Rockaway River Monitoring Point	754088.00	471279.58	40^0 54' 12.980"	74^0 34' 31.496"	627.57	-	-	14-Mar-11		1.96	--	625.61		
SW-R-5 [4]	Rockaway River Monitoring Point	754314.04	470408.85	40^0 54' 15.206"	74^0 34' 42.839"	640.66	-	-	14-Mar-11		0.95	--	639.71		
SW-R-6 [4]	Rockaway River Monitoring Point	754071.52	470697.75	40^0 54' 12.812"	74^0 34' 39.073"	631.68	-	-	14-Mar-11		--	--	--		
SW-D-1 [5]	Drainage Channel Staff Gauge	754428.36	471240.17	40^0 54' 16.343"	74^0 34' 32.013"	625.75	-	-	14-Mar-11		--	--	--		
SW-D-2 [5]	Drainage Channel Staff Gauge	754285.35	471361.22	40^0 54' 14.931"	74^0 34' 30.435"	626.07	-	-	14-Mar-11		2.21	--	623.86		
SW-D-3 [5]	Drainage Channel Staff Gauge	754381.23	471548.18	40^0 54' 15.880"	74^0 34' 28.001"	625.70	-	-	14-Mar-11		1.75	--	623.95		
SW-D-4	Drainage Channel Monitoring Point	754295.56	471291.74	40^0 54' 15.047"	74^0 34' 31.355"	625.02	-	-	14-Mar-11		1.19	--	623.83		
SW-D-5	Drainage Channel Monitoring Point	754222.49	471912.85	40^0 54' 14.321"	74^0 34' 23.155"	623.87	-	-	14-Mar-11		1.10	--	622.77		
DRC-2	Drainage Channel Monitoring Point	754117.49	471971.58	40^0 54' 13.277"	74^0 34' 22.483"	623.29	-	-	14-Mar-11		N/A	--	--		

FOOTNOTES

(1) Reference elevation measured at the top of a 3.33 ft. Staff gauge. Water depth based on a visual observation of the water level on the Staff gauge.
(2) Horizontal Datum: New Jersey State Plane Coordinate System NAD 83. Vertical Datum: NAVD 88
(3) New SG-R2 replaced the old SG-R2 installed in Nov. 1998. Professional survey performed by James M. Stewart, Inc., Philadelphia, PA May 2004. SG-R2 is a chiseled arrow on Iron Beam
(4) As outlined in the PRMP the six (6) new Rockaway River monitoring points reference survey elevation was shot at the top of a stake installed to each point
(5) SW-D-1, SW-D-2 and SW-D-3 were resurveyed points at the top of the stake that secures each drainage ditch staff gauge.
These points were reshot to insure the reference elevation integrity remained for each of the 3 staff gauges as a result of source reduction remedial disturbance.
(6) Ground reference elevation for SG and SW series gauges and monitoring points is a point specific to each device (I.e., top of stake, top of gauge, notched point on concrete or iron etc)
(7) Corrected water level elevations utilize an average specific gravity of 0.9363 (RMT, Inc. product samplig in October 1999)

TABLE 4
Dayco Corporation/L.E. Carpenter Superfund Site
Groundwater Monitoring Data

MONITORING WELLS	ANALYTICAL PARAMETERS							
	SAMPLE DATE	QUARTER	Benzene	Ethylbenzene	Toluene	Total Xylenes	bis-2-Ethylhexylphthalate (DEHP)	1,3-Butadiene
		UNITS	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
		SOLUBILITY LIMIT	1,700,000	152,000	515,000	175,000	334	
		PRACTICAL QUANTITATION LIMIT [PQL]	1	2	1	2	3	
		NEW JERSEY GROUNDWATER QUALITY STANDARDS (NJGWQS) CLASS IIA	0.2	700	600	1,000	2	
		HIGHER OF NJGWQS AND PQL	1	700	600	1,000	3	
MW19								
Dilution factor for BTEX 2000	24-Feb-95	1	< 660	1,700	110,000	10,000	NR	
Dilution factor for BTEX 100	14-Jun-95	2	150	3,400	140,000	17,000	NS	
Dilution factor 5000 for BTEX & 2 for DEHP; MDL for Benzene 1000 ug/l	24-Apr-98	2	< 1,000	2,850	76,700	14,900	7	
Dilution factor for BTEX 500	2-Aug-01	3	< 95	3,000	62,000	17,000	3	
Dilution factor for BTEX 1000	6-Jun-02	2	< 200	1,000	30,000	6,000	6	
Dilution factor for BTEX 100, Toluene 200	20-Nov-03	4	< 20	1,500	40,000	7,400	J 6	
	15-Jun-04	2	< 100	1,400	46,000	6,600	J 4	
Dilution factor for BTEX 100, Toluene 500	10-Aug-04	3	< 20	2,100	56,000	11,000	J 2	
Dilution factor for BTEX 50	13-Jan-05	1	< 10	750	18,000	3,600	< 1	
Lower Grab Water Sample; Dilution factor for BTEX 5	8-Apr-05	2	< 1	97	1,300	530	J 3	
Upper Grab Water Sample; Dilution factor for Toluene 5	8-Apr-05	2	< 0.2	86.0	410.0	430.0	J 3	
Dilution factor for BTEX 200	27-Jul-05	3	< 40	1,100	44,000	6,000	J 2	
Dilution factor for BTEX 100	27-Oct-05	4	< 20	200	10,000	1,200	J 5	
Dilution factor for BTEX 250	28-Feb-06	1	< 50	880	28,000	4,900	J 3	
Dilution factor for BTEX 200	20-Jun-06	2	< 40	1,600	53,000	8,700	J 3	
Dilution factor for BTEX 200	13-Sep-06	3	< 40	2,100	51,000	11,000	J 3	
Dilution factor for BTEX 200	8-Nov-06	4	< 40	2,200	59,000	11,000	J 2	
Dilution factor for BTEX 500	8-Feb-07	1	< 500	1,900	93,000	9,800	< 1	
Dilution factor for BTEX 50, Toluene 200	27-Jun-07	2	< 50	680	32,000	3,000	< 1	
Dilution factor for BTEX 100, Toluene 500	12-Sep-07	3	< 100	1,500	76,000	7,300	3	
Dilution factor for BTEX 250, DEHP 1.1	4-Dec-07	4	< 250	1,500	49,000	7,500	< 1	
	20-Feb-08	1	< 1.0	< 1.0	< 5.0	< 3.0	< 1	
Dilution factor for BEX 100, Toluene 200, DEHP 1.05	7-May-08	2	< 100	650	26,000	2,800	< 1	
Dilution factor for Benzene 10, Ethylbenzene & Xylenes 200, Toluene 500	7/23/2008	3	< 10	1,000	35,000	5,400	< 1	
Dilution factor for BTEX 200	10/29/2008	4	< 40	1,400	43,000	6,800	J 3	
Dilution factor for Benzene 50, Ethylbenzene & Xylenes 50, Toluene 500	1/14/2009	1	< 45	700	34,000	3,500	J 2	
Dilution factor for BEX 50, Toluene 500	4/8/2009	2[(5)]	< 45	940	37,000	4,800	J 3	
Dilution factor for BEX 50, Toluene 500	7/22/2009	3	< 45	1,100	48,000	5,700	J 1	
	MW-19 abandoned Ocober 14, 2009							
MW19R								
	12/8/2010	4	< 0.5	400	1000	1200	1.2	
	3/14/2011	1	< 0.5	< 0.5	< 0.5	< 1.5	< 1	< 1.0
MW19-5R								
Dilution factor for Ethyl benzene 25, Xylene 250 and Toluene 1000	8-Dec-10	4	19	2700	80000	15000	1.4	
Dilution factor for ethyl benzene 500, xylene 500, toluene 500	16-Mar-11	1	20	2100	92000	11000	< 0.95	< 1.0
MW19-6R								
	8-Dec-10	4	< 0.5	7.1	100.0	63.0	8.1	
	14-Mar-11	1	< 0.5	8.1	33.0	38.0	1.1	< 1.0
MW19-7								
Dilution factor for BTEX 50	15-Nov-99	4	< 16	100	51	1,400	< 4	
Dilution factor for BTEX 2	1-Aug-01	3	6.7	6.6	13	680	< 0.4	
Dilution factor for BTEX 5	7-Mar-02	1	3	< 1	< 1	250	2	
	5-Jun-02	2	0.48	1.60	27	27	< 0.4	
	19-Nov-03	4	4.7	J 0.4	J 0.3	460	J 1.0	
	16-Jun-04	2	J 2.8	130.0	2,100	630	< 1.0	
	16-Jun-04	2[duplicate]	J 4	130	2,100	610	< 1	
	10-Aug-04	3	2	2	1	20	< 1	
Dilution factor for BTEX 2	12-Jan-05	1	6.1	90.0	240.0	760	< 1.0	
	12-Jan-05	1[duplicate]	2.9	45.0	120.0	380	< 1.0	
Lower Grab Water Sample; Dilution factor for BTEX 25	7-Apr-05	2	J 9.5	210.0	2,700	1,400	< 1.0	
Upper Water Grab Sample; Dilution factor for BTEX 10	7-Apr-05	2	J 13	370	5,600	2,300	< 1	
Lower Grab Water Sample	27-Jul-05	3	2.2	< 0.2	J 0.2	J 1.7	< 0.9	
Upper Grab Water Sample	27-Jul-05	3	1.5	< 0.2	J 0.5	J 2.4	< 1.0	
Dilution factor for BTEX 200	27-Oct-05	4	J 62	710	16,000	3,600	< 1	
Dilution factor for Total Xylenes 5	28-Feb-06	1	7.5	4.9	J 0.3	870	< 1.0	
Dilution factor for Total Xylenes 5	28-Feb-06	1[duplicate]	7.5	5.0	J 0.3	840	< 0.9	
	20-Jun-06	2	6.5	19.0	J 0.6	550	< 1.0	
Dilution factor for Total Xylenes 5	12-Sep-06	3	4.9	33.0	J 0.3	440	< 1.0	
	8-Nov-06	4	2.6	< 0.2	< 0.2	26	< 0.9	
	7-Feb-07	1	2.6	< 1.0	< 5.0	< 3.0	< 1.0	
	7-Feb-07	1[duplicate]	2.6	< 1.0	< 5.0	< 3.0	< 1.0	
	27-Jun-07	2	< 1.0	< 1.0	< 5.0	23	< 1.0	
	11-Sep-07	3	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	
Dilution for DEHP 1.1	5-Dec-07	4	< 1.0	< 1.0	< 5.0	< 3.0	< 1.1	
	19-Feb-08	1	< 1.0	7.3	55	36	< 1.0	
Dilution for DEHP 1.05	7-May-08	2	< 1.0	< 1.0	< 5.0	5.6	< 1.0	
	22-Jul-08	3	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	
	28-Oct-08	4	< 0.2	< 0.2	< 0.2	< 0.6	< 1.0	
	28-Oct-08	4[duplicate]	< 0.2	< 0.2	< 0.2	< 0.6	< 1.0	
	14-Jan-09	1	< 0.9	J 3.0	J 3.0	32.0	< 1.0	
	7-Apr-09	2	< 0.9	< 0.8	< 0.8	< 0.9	< 1.0	
	21-Jul-09	3	< 0.9	< 0.8	< 0.8	< 0.9	< 1.0	
	MW-19-7 abandoned Ocober 13, 2009							
MW19-7R								
	8-Dec-10	4	< 0.5	< 0.5	< 0.5	< 1.5	< 1.0	
Dilution factor ethylbenzene 100, toluene 1000, xylene 100	14-Mar-11	1	11	1,400	33,000	6,200	< 1.0	< 1.0
MW19-8								
Dilution factor for BTEX 50	15-Nov-99	4	< 0.31	< 0.38	< 0.34	< 0.40	< 4.1	
Dilution factor for BTEX 2	1-Aug-01	3	0.5	< 0.2	< 0.2	< 0.2	< 0.4	
	5-Jun-02	2	< 0.22	< 0.18	< 0.24	< 0.20	< 0.4	
	19-Nov-03	4	< 0.2	< 0.2	< 0.2	< 0.6	< 0.9	
	17-Jun-04	2	< 0.2	< 0.2	< 0.2	< 0.6	< 1.0	
	11-Aug-04	3	< 0.2	< 0.2	< 0.2	< 0.6	< 1.0	
	12-Jan-05	1	< 0.2	J 0.3	< 0.2	< 0.6	< 1.0	
	11-Apr-05	2	< 0.2	< 0.2	< 0.2	< 0.6	< 1.0	
	27-Jul-05	3	< 0.2	< 0.2	< 0.2	< 0.6	< 1.0	
	27-Oct-05	4	< 0.2	< 0.2	< 0.2	< 0.6	< 1.0	
	14-Mar-11	1	< 0.5	< 0.5	< 0.5	< 1.5	< 1.0	< 1.0

TABLE 4
Dayco Corporation/L.E. Carpenter Superfund Site
Groundwater Monitoring Data

MONITORING WELLS	SAMPLE DATE	QUARTER	Benzene	Ethylbenzene	Toluene	Total Xylenes	bis-2-Ethylhexylphthalate (DEHP)	1,3-Butadiene
			ANALYTICAL PARAMETERS					
		UNITS	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
		SOLUBILITY LIMIT	1,700,000	152,000	515,000	175,000	334	
		PRACTICAL QUANTITATION LIMIT [PQL]	1	2	1	2	3	
		NEW JERSEY GROUNDWATER QUALITY STANDARDS (NJGWQS) CLASS IIA	0.2	700	600	1,000	2	
		HIGHER OF NJGWQS AND PQL	1	700	600	1,000	3	
MW19-12								
	21-Jun-06	2	< 0.2	< 0.2	< 0.2	< 0.6	< 1.0	
	12-Sep-06	3	< 0.2	< 0.2	< 0.2	< 0.6	< 1.0	
	7-Nov-06	4	< 0.2	< 0.2	< 0.2	< 0.6	< 1.0	
	7-Nov-06	4[duplicate]	< 0.2	< 0.2	< 0.2	< 0.6	< 0.9	
	6-Feb-07	1	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	
	26-Jun-07	2	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	
	26-Jun-07	2[duplicate]	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	
	11-Sep-07	3	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	
	4-Dec-07	4	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	
	19-Feb-08	1	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	
Dilution for DEHP 1.11	6-May-08	2	< 1.0	< 1.0	< 5.0	< 3.0	< 1.1	
	22-Jul-08	3	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	
	28-Oct-08	4	< 0.2	< 0.2	< 0.2	< 0.6	< 1.0	
	13-Jan-09	1	< 0.9	< 0.8	< 0.8	< 0.9	< 1.0	
	7-Apr-09	2	< 0.9	< 0.8	< 0.8	< 0.9	< 0.9	
	21-Jul-09	3	< 0.9	< 0.8	< 0.8	< 0.9	< 1.0	
	10-Nov-09	4	< 0.9	< 0.8	< 0.8	< 0.9	< 0.9	
	15-Feb-10	1	< 0.5	< 0.5	< 0.5	< 1.5	< 0.96	
	20-Apr-10	2	< 0.5	< 0.5	< 0.5	< 1.5	< 0.98	
	24-Aug-10	3	< 0.5	< 0.5	< 0.5	< 1.5	< 0.96	
	7-Dec-10	4	< 0.5	< 0.5	< 0.5	< 1.5	< 0.96	
	14-Mar-11	1	< 0.5	< 0.5	< 0.5	< 1.5	< 0.95	< 1.0
MW19-13								
	7-Dec-10	4	***6.3***	42	1	400	< 0.95	
Dilution factor toluene 10	14-Mar-11	1	***2.6***	71	260	330	< 0.95	< 1.0
MW19-14								
	8-Dec-10	4	0.7	110	***1,800***	510	< 0.98	
	8-Dec-10	4[duplicate]	< 0.5	120	***2,100***	580	< 1.0	
	16-Mar-11	1	< 0.5	< 0.5	1.4	< 1.5	< 0.99	< 1.0
	16-Mar-11	1[duplicate]	< 0.5	< 0.5	< 0.5	< 1.5	< 0.95	
MW19-15								
	7-Dec-10	4	< 0.5	< 0.5	< 0.5	< 1.5	< 0.99	
	14-Mar-11	1	< 0.5	< 0.5	< 0.5	< 1.5	< 0.95	< 1.0
MW19-16								
	7-Dec-10	4	< 0.5	< 0.5	< 0.5	< 1.5	< 0.96	
	14-Mar-11	1	< 0.5	< 0.5	< 0.5	< 1.5	< 0.95	< 1.0
MW19-17								
	8-Dec-10	4	< 0.5	< 0.5	< 0.5	< 1.5	< 0.95	
	14-Mar-11	1	< 0.5	< 0.5	< 0.5	< 1.5	< 0.95	< 1.0
MW-8								
	1-Sep-89	3						
	1-Jan-90	1						
	23-Jul-08	3	< 1.0	< 1.0	< 5.0	15	< 1.0	
	29-Oct-08	4	< 0.2	< 0.2	< 0.2	< 0.6	J 2	
	14-Jan-09	1	< 0.9	< 0.8	< 0.8	< 0.9	***8***	
	8-Apr-09	2[5]	< 0.9	< 0.8	< 0.8	< 0.9	J 3	
	21-Jul-09	3	< 0.9	< 0.8	< 0.8	< 0.9	J 2	
	11-Nov-09	4	< 0.9	< 0.8	< 0.8	< 0.9	J 3	
	15-Feb-10	1	< 0.5	< 0.5	< 0.5	< 1.5	***3.9***	
	20-Apr-10	2	< 0.5	< 0.5	< 0.5	< 1.5	***16***	
	24-Aug-10	3	< 0.5	< 0.5	< 0.5	4.2	***4.8***	
	7-Dec-10	4	< 0.5	< 0.5	< 0.5	< 1.5	1.7	
	14-Mar-11	1	< 0.5	< 0.5	< 0.5	< 1.5	***3.5***	
MW-25R								
	21-Jun-06	2	< 0.2	< 0.2	< 0.2	< 0.6	< 1.0	
	21-Jun-06	2[duplicate]	< 0.2	< 0.2	< 0.2	< 0.6	< 1.0	
	13-Sep-06	3	< 0.2	< 0.2	J 0.5	< 0.6	J 1.0	
	7-Nov-06	4	< 0.2	< 0.2	< 0.2	< 0.6	< 1.0	
	8-Feb-07	1	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	
	26-Jun-07	2	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	
	26-Jun-07	2[duplicate]	< 1.0	< 1.0	< 5.0	< 3.0	1.6	
	11-Sep-07	3	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	
Dilution factor for DEHP is 1.3	6-Dec-07	4	< 1.0	< 1.0	< 5.0	< 3.0	< 1.3	
	19-Feb-08	1	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	
Dilution for DEHP 1.29	6-May-08	2	< 1.0	< 1.0	< 5.0	< 3.0	< 1.3	
	22-Jul-08	3	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	
	29-Oct-08	4	< 0.2	< 0.2	J 0.3	< 0.6	< 1.0	
	15-Jan-09	1	< 0.9	< 0.8	< 0.8	< 0.9	< 0.9	
	7-Apr-09	2[5]	< 0.9	< 0.8	< 0.8	< 0.9	J 1	
	22-Jul-09	3	< 0.9	< 0.8	< 0.8	< 0.9	< 0.9	
	11-Nov-09	4	< 0.9	< 0.8	< 0.8	< 0.9	J 1	
	15-Feb-10	1	< 0.5	< 0.5	< 0.5	< 1.5	< 1.0	
	20-Apr-10	2	< 0.5	< 0.5	< 0.5	< 1.5	< 0.98	
	25-Aug-10	3	< 0.5	< 0.5	< 0.5	< 1.5	< 0.99	
	9-Dec-10	4	< 0.5	< 0.5	< 0.5	< 1.5	< 0.95	
	14-Mar-11	1	< 0.5	< 0.5	< 0.5	< 1.5	< 0.95	

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Groundwater Monitoring Data

MONITORING WELLS	ANALYTICAL PARAMETERS							
	SAMPLE DATE	QUARTER	Benzene	Ethylbenzene	Toluene	Total Xylenes	bis-2-Ethylhexylphthalate (DEHP)	1,3-Butadiene
UNITS			ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
SOLUBILITY LIMIT			1,700,000	152,000	515,000	175,000	334	
PRACTICAL QUANTITATION LIMIT [PQL]			1	2	1	2	3	
NEW JERSEY GROUNDWATER QUALITY STANDARDS (NJGWQS) CLASS IIA			0.2	700	600	1,000	2	
HIGHER OF NJGWQS AND PQL			1	700	600	1,000	3	
MW-27s								
	22-Jun-06	2	J 0.6	3.7	3.9	14	J 3.0	
	11-Sep-06	3	< 0.2	< 0.2	< 0.2	< 0.6	J 2.0	
	7-Nov-06	4	< 0.2	< 0.2	< 0.2	< 0.6	J 1.0	
	7-Feb-07	1	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	
	26-Jun-07	2	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	
	11-Sep-07	3	< 1.0	< 1.0	< 5.0	< 3.0	1.2	
Dilution factor for DEHP is 1.4	4-Dec-07	4	< 1.0	< 1.0	< 5.0	< 3.0	< 1.4	
Dilution factor for DEHP is 1.18	19-Feb-08	1	< 1.0	< 1.0	< 5.0	< 3.0	< 1.2	
Dilution factor for DEHP is 1.18	7-May-08	2	< 1.0	< 1.0	< 5.0	< 3.0	< 1.2	
	23-Jul-08	3	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	
	30-Oct-08	4	< 0.2	< 0.2	< 0.2	< 0.6	< 1.0	
	14-Jan-09	1	< 0.9	< 0.8	< 0.8	< 0.9	< 1.0	
	8-Apr-09	2	< 0.9	< 0.8	< 0.8	J 1.0	< 1.0	
	21-Jul-09	3	< 0.9	< 0.8	< 0.8	< 0.9	< 1.0	
	10-Nov-09	4	< 0.9	< 0.8	< 0.8	< 0.9	< 0.9	
	14-Feb-10	1	< 0.5	< 0.5	< 0.5	< 1.5	< 1.0	
	20-Apr-10	2	< 0.5	< 0.5	< 0.5	< 1.5	< 1.0	
	24-Aug-10	3	< 0.5	< 0.5	< 0.5	< 1.5	< 0.99	
	8-Dec-10	4	< 0.5	< 0.5	< 0.5	< 1.5	< 0.98	
	14-Mar-11	1	< 0.5	< 0.5	< 0.5	< 1.5	< 0.95	< 1.0
MW-28s								
Dilution factor for BTEX 5	21-Jun-06	2	J ***1.6***	560.0	< 1.0	***1,400***	***100***	
Dilution factor for Xylene is 5, DEHP is 10	13-Sep-06	3	J 0.2	210.0	< 0.2	450	***570***	
Dilution factor for Xylene is 5, DEHP is 10	13-Sep-06	3 duplicate	J 0.3	220.0	< 0.2	470	***550***	
Dilution factor for DEHP 10	7-Nov-06	4	< 0.2	92.0	< 0.2	180	***250***	
Dilution factor for DEHP is 20	7-Feb-07	1	< 1.0	70.0	< 5.0	150	***260***	
Dilution factor for DEHP is 20	7-Feb-07	1 duplicate	< 1.0	58.0	< 5.0	130	***250***	
	27-Jun-07	2	< 1.0	30.0	< 5.0	56	***28***	
Dilution factor for DEHP is 5	12-Sep-07	3	< 1.0	17.0	< 5.0	42	***49***	
Dilution for DEHP is 1.2	6-Dec-07	4	< 1.0	32.0	< 5.0	96	***14***	
Dilution for DEHP is 20	20-Feb-08	1	< 1.0	14.0	< 5.0	36	***39***	
Dilution for DEHP is 11.1	7-May-08	2	< 1.0	2.7	< 5.0	6.6	***160***	
Dilution for DEHP is 20	23-Jul-08	3	< 1.0	37	< 5.0	93	***420***	
Dilution for DEHP is 10	23-Jul-08	3 duplicate	< 1.0	41	< 5.0	100	***290***	
Dilution factor for DEHP 10	29-Oct-08	4	< 0.2	4.3	< 0.2	15	***300***	
Dilution factor for DEHP 10	15-Jan-09	1	< 0.9	17	< 0.8	64	***140***	
Dilution factor for DEHP 10	8-Apr-09	2	< 0.9	39	< 0.8	100	***200***	
Dilution factor for DEHP 10	22-Jul-09	3	< 0.9	18	< 0.8	53	***180***	
Dilution factor for DEHP 5	12-Nov-09	4	< 0.9	10	< 0.8	67	***130***	
	16-Feb-10	1	< 0.5	8.9	< 0.5	27	***65***	
Dilution factor for DEHP 2	16-Feb-10	1 duplicate	< 0.5	8.8	< 0.5	27	***100***	
Dilution factor for DEHP 5	21-Apr-10	2	< 0.5	22	< 0.5	71	***240***	
	25-Aug-10	3	< 0.5	5.7	< 0.5	12	***39***	
	25-Aug-10	3 duplicate	< 0.5	< 0.5	< 0.5	< 1.5	***29***	
	8-Dec-10	4	0.6	18.0	< 0.5	50.0	***92***	
	15-Mar-11	1	< 0.5	< 0.5	< 0.5	6.8	***51***	
	15-Mar-11	1 duplicate	< 0.5	< 0.5	< 0.5	5.8	***52***	
MW-28i								
Dilution factor for BTEX 5	22-Jun-06	2	< 1.0	480.0	< 1.0	***1,300***	***270***	
Dilution factor for Xylene and DEHP is 5	13-Sep-06	3	< 0.2	72.0	J 0.6	520	***180***	
	7-Nov-06	4	< 0.2	10.0	< 0.2	14	***90***	
Dilution factor for DEHP is 10	7-Feb-07	1	< 1.0	< 1.0	< 5.0	< 3.0	***76***	
	27-Jun-07	2	< 1.0	< 1.0	< 5.0	< 3.0	***3.9***	
	12-Sep-07	3	< 1.0	< 1.0	< 5.0	< 3.0	***21***	
Dilution for DEHP is 1.3	6-Dec-07	4	< 1.0	< 1.0	< 5.0	< 3.0	1.4	
Dilution for DEHP is 5	20-Feb-08	1	< 1.0	< 1.0	< 5.0	< 3.0	***31***	
Dilution for DEHP is 1.11	7-May-08	2	< 1.0	< 1.0	< 5.0	< 3.0	***28***	
	23-Jul-08	3	< 1.0	< 1.0	< 5.0	< 3.0	***49***	
	29-Oct-08	4	< 0.2	< 0.2	< 0.2	< 0.6	***110***	
	15-Jan-09	1	< 0.9	< 0.8	< 0.8	< 0.9	***61***	
	15-Jan-09	1 duplicate	< 0.9	< 0.8	< 0.8	< 0.9	***41***	
Dilution factor for DEHP 10	8-Apr-09	2(5)	< 0.9	< 0.8	< 0.8	< 0.9	***240***	
	22-Jul-09	3	< 0.9	< 0.8	< 0.8	< 0.9	***19***	
	12-Nov-09	4	< 0.9	< 0.8	< 0.8	< 0.9	***15***	
	12-Nov-09	4 duplicate	< 0.9	< 0.8	< 0.8	< 0.9	***11***	
	16-Feb-10	1	< 0.5	< 0.5	< 0.5	< 1.5	***12***	
	21-Apr-10	2	< 0.5	2.7	< 0.5	9.4	***26***	
	25-Aug-10	3	< 0.5	< 0.5	< 0.5	< 1.5	***11***	
	8-Dec-10	4	0.8	< 0.5	< 0.5	< 1.5	***25***	
	14-Mar-11	1	< 0.5	< 0.5	< 0.5	< 1.5	***28***	
MW-29s								
	22-Jun-06	2	< 0.2	J 0.2	< 0.2	J 0.6	J 1.0	
	14-Sep-06	3	< 0.2	< 0.2	< 0.2	< 0.6	J 1.0	
	9-Nov-06	4	< 0.2	< 0.2	< 0.2	< 0.6	***31***	
	7-Feb-07	1	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	
	27-Jun-07	2	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	
	11-Sep-07	3	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	
Deilution for DEHP 1.2	5-Dec-07	4	< 1.0	< 1.0	< 5.0	< 3.0	< 1.2	
	19-Feb-08	1	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	
Dilution factor for DEHP 1.05 [DUP-02]	19-Feb-08	1 duplicate	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	
Dilution factor for DEHP 1.18	7-May-08	2	< 1.0	< 1.0	< 5.0	< 3.0	< 1.2	
	22-Jul-08	3	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	
	29-Oct-08	4	< 0.2	< 0.2	J 0.3	< 0.6	< 1.0	
	29-Oct-08	4 duplicate	< 0.2	< 0.2	J 0.2	< 0.6	< 0.9	
	15-Jan-09	1	< 0.9	< 0.8	< 0.8	< 0.9	< 1.0	
	7-Apr-09	2(4)	< 0.9	< 0.8	< 0.8	< 0.9	< 1.0	
	21-Jul-09	3	< 0.9	< 0.8	< 0.8	< 0.9	< 1.0	
	11-Nov-09	4	< 0.9	< 0.8	< 0.8	< 0.9	< 1.0	
	15-Feb-10	1	< 0.5	< 0.5	< 0.5	< 1.5	< 1.0	
	20-Apr-10	2	< 0.5	< 0.5	< 0.5	< 1.5	< 1.0	
	24-Aug-10	3	< 0.5	< 0.5	< 0.5	< 1.5	< 0.95	
	7-Dec-10	4	< 0.5	< 0.5	< 0.5	< 1.5	< 0.98	
	14-Mar-11	1	< 0.5	< 0.5	< 0.5	< 1.5	< 0.95	

TABLE 4
Dayco Corporation/L.E. Carpenter Superfund Site
Groundwater Monitoring Data

MONITORING WELLS	ANALYTICAL PARAMETERS							
	SAMPLE DATE	QUARTER	Benzene	Ethylbenzene	Toluene	Total Xylenes	bis-2-Ethylhexylphthalate (DEHP)	1,3-Butadiene
		UNITS	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
		SOLUBILITY LIMIT	1,700,000	152,000	515,000	175,000	334	
		PRACTICAL QUANTITATION LIMIT [PQL]	1	2	1	2	3	
NEW JERSEY GROUNDWATER QUALITY STANDARDS (NJGWQS) CLASS IIA			0.2	700	600	1,000	2	
		HIGHER OF NJGWQS AND PQL	1	700	600	1,000	3	
MW-30s								
	21-Jun-06	2	< 1.0	***1,200***	J 1.3	***3,900***	***740***	
Dilution factor for BTEX 20, DEHP is 500	13-Sep-06	3	< 4.0	***1,200***	46.0	***5,100***	***19,000***	
Dilution factor for BTEX 5, DEHP is 100	9-Nov-06	4	< 1.0	540	< 1.0	***2,600***	***2,500***	
	7-Feb-07	1	NS - frozen	NS - frozen	NS - frozen	NS - frozen	NS - frozen	
Dilution factor for BTEX 5, DEHP is 2000	26-Jun-07	2	***2.1***	300	< 25	***1,200***	***13,000***	
Dilution factor for DEHP is 50	12-Sep-07	3	< 1.0	< 1.0	< 5.0	< 3.0	***880***	
Dilution factor for DEHP is 200	12-Sep-07	3 duplicate	< 1.0	< 1.0	< 5.0	< 3.0	***1,700***	
Dilution factor for DEHP is12, BTEX is 5	6-Dec-07	4	***1.5***	34.0	110	260	***200***	
Dilution factor for DEHP is 111, BTEX is 5	20-Feb-08	1	< 5.0	110	< 25	480	***3,800***	
Dilution factor for Total Xylene is 5, DEHP is 1.25	8-May-08	2	< 1.0	100	< 5.0	460	***9.6***	
	22-Jul-08	3	< 1.0	14	< 5.0	86	***80***	
DEHP Dilution 5	29-Oct-08	4	< 0.2	80	J 0.2	290	***180***	
	15-Jan-09	1	NS - frozen	NS - frozen	NS - frozen	NS - frozen	NS - frozen	
Dilution factor for DEHP is 50	8-Apr-09	2	< 0.9	74	< 0.8	340	***1,100***	
Dilution factor for DEHP is 10	22-Jul-09	3	< 0.9	8	< 0.8	34	***550***	
Dilution factor for DEHP is 10	11-Nov-09	4	< 0.9	63	< 0.8	140	***350***	
	15-Feb-10	1	NS - frozen	NS - frozen	NS - frozen	NS - frozen	NS - frozen	
Dilution factor for DEHP is 10	21-Apr-10	2	< 0.5	5.4	< 0.5	15	***480***	
Dilution factor for DEHP is 5	21-Apr-10	2 duplicate	< 0.5	6	< 0.5	22	***460***	
Dilution factor for DEHP is 2	24-Aug-10	3	< 0.5	12	< 0.5	19	***140***	
Dilution factor for DEHP is 5	8-Dec-10	4	< 0.5	16	< 0.5	38	***180***	
Dilution factor for DEHP is 5	8-Dec-10	4 duplicate	< 0.5	15	< 0.5	37	***250***	
	16-Mar-11	1	< 0.5	10	< 0.5	39	***390***	
MW-30i								
	21-Jun-06	2	J 0.3	38	1.4	170	J 2	
	13-Sep-06	3	< 0.2	1.5	< 0.2	4.9	***19***	
	8-Nov-06	4	< 0.2	J 0.2	< 0.2	< 0.6	J 1	
	8-Nov-06	4 duplicate	< 0.2	J 0.2	< 0.2	< 0.6	< 1.0	
	7-Feb-07	1	NS - frozen	NS - frozen	NS - frozen	NS - frozen	NS - frozen	
	26-Jun-07	2	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	
	12-Sep-07	3	< 1.0	< 1.0	< 5.0	< 3.0	1.3	
Dilution factor for DEHP 1.2	6-Dec-07	4	< 1.0	< 1.0	< 5.0	< 3.0	< 1.2	
Dilution factor for DEHP 1.05	19-Feb-08	1	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	
Dilution factor for DEHP 1.05	7-May-08	2	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	
Dilution factor for DEHP 1.18	7-May-08	2 duplicate	< 1.0	< 1.0	< 5.0	< 3.0	< 1.2	
	22-Jul-08	3	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	
	29-Oct-08	4	< 0.2	< 0.2	< 0.2	< 0.6	J 2	
	15-Jan-09	1	NS - frozen	NS - frozen	NS - frozen	NS - frozen	NS - frozen	
	8-Apr-09	2	< 0.9	< 0.8	< 0.8	< 0.9	J 3	
	23-Jul-09	3	< 0.9	< 0.8	< 0.8	< 0.9	J 2	
	23-Jul-09	3 duplicate	< 0.9	< 0.8	< 0.8	< 0.9	J 3	
	11-Nov-09	4	< 0.9	< 0.8	< 0.8	< 0.9	J 1	
	15-Feb-10	1	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	
	21-Apr-10	2	< 0.5	1.9	< 0.5	2.0	1.7	
	24-Aug-10	3	< 0.5	< 0.5	< 0.5	< 1.5	1.7	
	7-Dec-10	4	< 0.5	< 0.5	< 0.5	< 1.5	< 1.0	
	16-Mar-11	1	< 0.5	< 0.5	< 0.5	< 1.5	2	
MW-30d								
	21-Jun-06	2	< 0.2	< 0.2	< 0.2	< 0.6	J 3	
	14-Sep-06	3	< 0.2	< 0.2	< 0.2	< 0.6	J ***9***	
	8-Nov-06	4	< 0.2	< 0.2	< 0.2	< 0.6	< 0.9	
	7-Feb-07	1	NS - frozen	NS - frozen	NS - frozen	NS - frozen	NS - frozen	
	26-Jun-07	2	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	
	12-Sep-07	3	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	
Dilution factor for DEHP 1.1	4-Dec-07	4	< 1.0	< 1.0	< 5.0	< 3.0	< 1.1	
Dilution factor for DEHP 1.1	4-Dec-07	4 duplicate	< 1.0	< 1.0	7.7	< 3.0	< 1.1	
Dilution factor for DEHP 1.05	19-Feb-08	1	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	
Dilution factor for DEHP 1.05	7-May-08	2	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	
	22-Jul-08	3	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	
	29-Oct-08	4	< 0.2	< 0.2	< 0.2	< 0.6	< 0.9	
	15-Jan-09	1	NS - frozen	NS - frozen	NS - frozen	NS - frozen	NS - frozen	
	8-Apr-09	2	< 0.9	< 0.8	< 0.8	< 0.9	< 1.0	
	21-Jul-09	3	< 0.9	< 0.8	< 0.8	< 0.9	< 0.9	
	11-Nov-09	4	< 0.9	< 0.8	< 0.8	< 0.9	< 0.9	
	15-Feb-10	1	< 0.5	< 0.5	< 0.5	< 1.5	< 1.0	
	21-Apr-10	2	< 0.5	< 0.5	< 0.5	< 1.5	< 0.95	
	24-Aug-10	3	< 0.5	< 0.5	< 0.5	< 1.5	< 0.95	
	7-Dec-10	4	< 0.5	< 0.5	< 0.5	< 1.5	< 1.0	
	16-Mar-11	1	< 0.5	< 0.5	< 0.5	< 1.5	< 0.95	
MW-31s								
Dilution factor for BTEX 500, DEHP 83.5	8-May-08	2	< 500	***5,500***	< ***2,500***	***27,000***	***310***	
Dilution factor for Benzene & Toluene 20, Ethylbenzene and Xylenes 250, DEHP 500	23-Jul-08	3	< 20	***9,000***	< 100	***49,000***	***16,000***	
Dilution factor for BTEX 50, DEHP 10	30-Oct-08	4	< 10	***7,900***	< 10	***40,000***	***760***	
Dilution factor for Benzene & Toluene 10, Ethylbenzene and Xylenes 100, DEHP 50	14-Jan-09	1	< 0.9	***4,400***	J 46	***25,000***	***3,100***	
Dilution factor for BTE 10 and Xylenes 100, DEHP 10	9-Apr-09	2	< 9	***2,300***	< 8	***9,600***	***690***	
Dilution factor for Benzene & Toluene 5, Ethylbenzene and Xylene 50, DEHP 500	23-Jul-09	3	J ***5***	***4,500***	J 10	***22,000***	***23,000***	
Dilution factor for Benzene Ethylbenzene & Toluene 5, Xylene 50, DEHP 10	12-Nov-09	4	< 5	***1,300***	J 5	***7,400***	***340***	
Dilution factor for Benzene & Toluene 5, Ethylbenzene & Xylene 50, DEHP 25	16-Feb-10	1	***4.4***	***4,000***	11	***17,000***	***1,000***	
Dilution factor for Ethylbenzene & Xylene 250, DEHP 25	22-Apr-10	2	***7.6***	***8,700***	16	***40,000***	***190***	
Dilution factor for Ethylbenzene & Xylene 100, DEHP 10	25-Aug-10	3	***3.6***	***760***	8.4	***12,000***	***440***	
Dilution factor for Ethylbenzene and Xylene is 50, DEHP 10	9-Dec-10	4	1.0	***730***	2.4	***4,100***	***1,100***	
Dilution factor for Ethylbenzene & Xylene 100, DEHP 25	17-Mar-11	1	***4.3***	***4,700***	14.0	***21,000***	***330***	

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MONITORING WELLS	SAMPLE DATE	QUARTER	Benzene	Ethylbenzene	Toluene	Total Xylenes	bis-2-Ethylhexylphthalate (DEHP)	1,3-Butadiene
			ANALYTICAL PARAMETERS					
UNITS			ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
SOLUBILITY LIMIT			1,700,000	152,000	515,000	175,000	334	
PRACTICAL QUANTITATION LIMIT [PQL]			1	2	1	2	3	
NEW JERSEY GROUNDWATER QUALITY STANDARDS (NJGWQS) CLASS IIA			0.2	700	600	1,000	2	
HIGHER OF NJGWQS AND PQL			1	700	600	1,000	3	
MW-32s								
Dilution factor for BTEX 200, DEHP 121000	8-May-08	2	< 200	16,000	< 1,000	75,000	370,000	
Dilution factor for Benzene & Toluene 50, Ethylbenzene and Xylenes 250, DEHP 200	23-Jul-08	3	< 50	8,600	< 250	43,000	7,900	
BTE 5, Xylenes 10, DEHP 100	30-Oct-08	4	J 1.1	1,200	J 1.7	6,900	4,600	
Dilution for BTE 50, Xylene 500, DEHP 500	15-Jan-09	1	< 45	8,900	< 40	40,000	12,000	
Dilution for Benzene & Ethylbenzene 20, Toluene & Xylenes 200, DEHP 100	8-Apr-09	2	< 18	8,200	< 16	50,000	8,600	
Dilution factor for BTE 50, Xylene & DEHP 200	23-Jul-09	3	< 45	7,400	< 40	43,000	5,400	
Dilllution factor for BTE 20, Xylene 200 & DEHP 100	12-Nov-09	4	< 18	3,800	< 16	29,000	2,300	
Dilution factor for Benzene & Toluene 5, Ethylbenzene & Xylene 50, DEHP 1000	16-Feb-10	1	7.7	7,400	10	36,000	130,000	
Dilution factor for Ethylbenzene and Xylenes 100, DEHP 40	22-Apr-10	2	6.7	6,200	14	31,000	2,800	
Dilution factor for Ethylbenzene and Xylenes 100, DEHP 100	25-Aug-10	3	6.9	4,500	4.5	20,000	6,100	
Dilution factor for Ethylbenzene and Xylene is 50, DEHP 200	9-Dec-10	4	0.9	1,100	0.5	5,900	15,000	
Dilution factor for Ethylbenzene and Xylene is 100, DEHP 50	17-Mar-11	1	3.3	3,600	0.55	11,000	2,000	
MW-33s								
Dilution factor for DEHP 1.25	8-May-08	2	4	6.6	< 5.0	27	16	
	23-Jul-08	3	1.8	< 1.0	< 5.0	3.3	21	
Dilution factor for DEHP 50	30-Oct-08	4	J 0.4	J 0.6	J 0.3	< 3.0	5,500	
Dilution factor for DEHP 200	15-Jan-09	1	< 0.9	< 0.8	< 0.8	< 0.9	3,400	
Dilution factor for DEHP 50	9-Apr-09	2	< 0.9	< 0.8	< 0.8	< 0.9	1,100	
Dilution factor for DEHP 500	23-Jul-09	3	< 0.9	< 0.8	< 0.8	J 2.0	81,000	
Dilution factor for DEHP 20	12-Nov-09	4	< 0.9	< 0.8	< 0.8	J 2.0	790	
Dilution factor for DEHP 250	16-Feb-10	1	< 0.5	0.5	< 0.5	5.1	21,000	
Dilution factor for DEHP 20	22-Apr-10	2	< 0.5	1.5	< 0.5	10	910	
Dilution factor for DEHP 10	25-Aug-10	3	< 0.5	< 0.5	< 0.5	5.9	560	
Dilution factor for DEHP is 100	9-Dec-10	4	< 0.5	< 0.5	< 0.5	< 1.5	9,700	
	17-Mar-11	1	< 0.5	2.5	< 0.5	14.0	280	
MW-34s								
Dilution factor for Ethylbenzene and Total Xylenes 5, DEHP 1.33	6-May-08	2	1.3	230	< 5.0	1,200	3	
Dilution factor for BTEX 20	23-Jul-08	3	< 20	470	< 100.0	2,300	1.6	
	30-Oct-08	4	< 0.2	2	< 0.2	180	7	
Dilution factor for BTE 10, Xylene 100	15-Jan-09	1	< 9	2,700	J 16.0	13,000	7	
Dilution for Benzene & Toluene 10, Ethylbenzene & Xylenes 100, DEHP 100	8-Apr-09	2	< 9	3,600	J 18.0	18,000	J 5	
Dilution for Benzene & Toluene 2, Ethylbenzene & Xylenes 20	23-Jul-09	3	< 2	1,300	J 5.0	6,700	9	
Ethylbenzene & Xylenes 10	12-Nov-09	4	< 0.9	440	< 0.8	1,000	J 4	
Dilution facor for Ethylbenzene and Xylene is 20	16-Feb-10	1	1.5	680	2.2	2,300	13	
Dilution factor for Ethylbenzene and Xylene is 100	22-Apr-10	2	5.6	3,400	44	14,000	8.1	
Dilution factor for Ethylbenzene and Xylene is 100	25-Aug-10	3	4.7	240	13	1,200	22	
	9-Dec-10	4	< 0.5	4	< 0.50	6	8	
	17-Mar-11	1	< 0.5	78	< 0.50	280	7.7	
MW-35s								
Dilution factor for Ethylbenzene and Total Xylenes 500, DEHP 57	6-May-08	2	1.3	230	< 5.0	1,200	490	
Dilution factor for Benzene & Toluene 10, Ethylbenzene and Xylenes 250, DEHP 20	23-Jul-08	3	16	12,000	260.0	67,000	530	
Dilution factor for Xylenes 100, Benzene 20, Toluene 20, Ethlbenzene 100, DEHP 10	30-Oct-08	4	J 9.6	8,800	34.0	57,000	460	
Dilution factor for Benzene and Toluene 20, Ethylbenzene, Xylene and DEHP 200	15-Jan-09	1	< 18	12,000	J 36.0	88,000	3,500	
Dilution factor for Benzene and Toluene 20, Ethylbenzene& Xylene 200, DEHP 50	8-Apr-09	2	< 18	13,000	J 40.0	100,000	1,800	
Dilution factor for Benzene & Toluene 20, Ethylbenzene and Xylene 200, DEHP 500	23-Jul-09	3	< 18	14,000	J 36.0	92,000	20,000	
Dilution factor for Benzene Ethylbenzene & Toluene 50, Xylene and DEHP 500	12-Nov-09	4	< 45	8,900	< 40.0	69,000	3,000	
Dilution factor for Benzene & Toluene 20, Ethylbenzene & Xylene 1000 and DEHP 25	16-Feb-10	1	< 10	9,800	30.0	59,000	660	
Dilution factor for Ethylbenzene & Xylene 200, and DEHP 25	22-Apr-10	2	13	14,000	35	79,000	540	
Dilution factor for Ethylbenzene & Xylene 1000, and DEHP 5	25-Aug-10	3	8.7	10,000	24	61,000	280	
Dilution for Ethylbenzene is 50, Xylene is 500, DEHP is 100	9-Dec-10	4	7.5	9,200	29	51,000	3,400	
Dilution for ethylbenzene is 200, xylene 200, bisethylhexylphthalate 25	17-Mar-11	1	5.8	16,000	30	83,000	570	
Atmospheric Blank	13-Jan-05	1	< 0.2	< 0.2	< 0.2	< 0.6	< 1.0	
	8-Apr-05	2	< 0.2	< 0.2	< 0.2	< 0.6	< 1.0	
	26-Jul-05	3	< 0.2	< 0.2	< 0.2	< 0.6	< 1.0	
	27-Oct-05	4	< 0.2	< 0.2	< 0.2	< 0.6	< 1.0	
	28-Feb-06	1	< 0.2	< 0.2	< 0.2	< 0.6	< 1.0	
	20-Jun-06	2	< 0.2	< 0.2	< 0.2	< 0.6	< 1.0	
	12-Sep-06	3	< 0.2	< 0.2	< 0.2	< 0.6	< 1.0	
	7-Nov-06	4	< 0.2	< 0.2	< 0.2	< 0.6	< 1.0	
	8-Feb-07	1	< 1.0	< 1.0	J 1.9	< 3.0	< 1.0	
	27-Jun-07	2	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	
	11-Sep-07	3	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	
	5-Dec-07	4	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	
ATM-01	20-Feb-08	1	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	
ATM-01, Dilution factor for DEHP 1.08	6-May-08	2	< 1.0	< 1.0	< 5.0	< 3.0	< 1.1	
	22-Jul-08	3	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	
	28-Oct-08	4	< 0.2	< 0.2	< 0.2	< 0.6	< 1.0	
	14-Jan-09	1	< 0.9	< 0.8	< 0.8	< 0.9	< 1.0	
	8-Apr-09	2	< 0.9	< 0.8	< 0.8	< 0.9	< 1.0	
	22-Jul-09	3	< 0.9	< 0.8	< 0.8	< 0.9	< 0.9	
	11-Nov-09	4	< 0.9	< 0.8	< 0.8	< 0.9	< 0.9	
	15-Feb-10	1	< 0.5	< 0.5	< 0.5	< 1.5	< 0.95	
	20-Apr-10	2	< 0.5	< 0.5	< 0.5	< 1.5	< 1.0	
	24-Aug-10	3	< 0.5	< 0.5	< 0.5	< 1.5	< 0.95	
	8-Dec-10	4	< 0.5	< 0.5	< 0.5	< 1.5	< 0.96	
	16-Mar-11	1	< 0.5	< 0.5	< 0.5	< 1.5	< 0.95	
Rinsate Blank								
	14-Jan-05	1	< 0.2	< 0.2	< 0.2	< 0.6	< 1.0	
	9-Apr-05	2	< 0.2	< 0.2	< 0.2	< 0.6	< 1.0	
	27-Jul-05	3	< 0.2	< 0.2	< 0.2	< 0.6	< 1.0	
	27-Oct-05	4	< 0.2	< 0.2	< 0.2	< 0.6	< 1.0	
	28-Feb-06	1	< 0.2	< 0.2	< 0.2	< 0.6	< 1.0	
	21-Jun-06	2	< 0.2	< 0.2	< 0.2	< 0.6	< 1.0	
	22-Jun-06	2	< 0.2	< 0.2	< 0.2	< 0.6	< 1.0	
	13-Sep-06	3	< 0.2	< 0.2	< 0.2	< 0.6	< 1.0	
	14-Sep-06	3	< 0.2	< 0.2	< 0.2	< 0.6	< 1.0	
	9-Nov-06	4	< 0.2	< 0.2	< 0.2	< 0.6	< 1.0	
	9-Nov-06	4	< 0.2	< 0.2	< 0.2	< 0.6	< 1.0	
	8-Feb-07	1	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	

TABLE 4
Dayco Corporation/L.E. Carpenter Superfund Site
Groundwater Monitoring Data

MONITORING WELLS	SAMPLE DATE	QUARTER	Benzene	Ethylbenzene	Toluene	Total Xylenes	bis-2-Ethylhexylphthalate (DEHP)	1,3-Butadiene
			ANALYTICAL PARAMETERS					
		UNITS	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
		SOLUBILITY LIMIT	1,700,000	152,000	515,000	175,000	334	
		PRACTICAL QUANTITATION LIMIT [PQL]	1	2	1	2	3	
		NEW JERSEY GROUNDWATER QUALITY STANDARDS (NJGWQS) CLASS IIA	0.2	700	600	1,000	2	
		HIGHER OF NJGWQS AND PQL	1	700	600	1,000	3	
	8-Feb-07	1	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	
	27-Jun-07	2	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	
	27-Jun-07	2	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	
	10-Sep-07	3	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	
	12-Sep-07	3	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	
	12-Sep-07	3	< 1.0	< 1.0	< 5.0	< 3.0	1.1	
	6-Dec-07	4	< 1.0	< 1.0	< 5.0	< 3.0	2.7	
	6-Dec-07	4	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	
RB-02	20-Feb-08	1	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	
RB-03	20-Feb-08	1	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	
	5-May-08	2	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	
RB-02	23-Jul-08	3	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	
RB-03	23-Jul-08	3	< 1.0	< 1.0	< 5.0	< 3.0	< 1.0	
RB-02	30-Oct-08	4	< 0.2	< 0.2	< 0.2	< 0.6	< 0.9	
RB-03	30-Oct-08	4	< 0.2	< 0.2	< 0.2	< 0.6	< 1.0	
RB-01	15-Jan-09	1	< 0.9	< 0.8	< 0.8	< 0.9	< 1.0	
RB-02	15-Jan-09	1	< 0.9	< 0.8	< 0.8	< 0.9	< 1.0	
RB-01	9-Apr-09	2	< 0.9	< 0.8	< 0.8	< 0.9	< 1.0	
RB-02	9-Apr-09	2	< 0.9	< 0.8	< 0.8	< 0.9	< 1.0	
RB-01	23-Jul-09	3	< 0.9	< 0.8	< 0.8	< 0.9	< 0.9	
RB-02	23-Jul-09	3	< 0.9	< 0.8	< 0.8	< 0.9	J 2.0	
RB-02	12-Nov-09	4	< 0.9	< 0.8	< 0.8	< 0.9	< 1.0	
RB-02	16-Feb-10	1	< 0.5	< 0.5	< 0.5	< 1.5	< 1.0	
RB-02	21-Apr-10	2	< 0.5	< 0.5	< 0.5	< 1.5	< 1.0	
RB-02	25-Aug-10	3	< 0.5	< 0.5	< 0.5	< 1.5	< 0.95	
RB-02	9-Dec-10	4	< 0.5	< 0.5	0.6	< 1.5	< 0.96	
RB-03	9-Dec-10	4	< 0.5	< 0.5	0.7	< 1.5	***23***	
RB-01	17-Mar-11	1	< 0.5	< 0.5	< 0.5	< 1.5	< 0.95	
RB-02	17-Mar-11	1	< 0.5	< 0.5	< 0.5	< 1.5	< 0.98	
RB-03	17-Mar-11	1	< 0.5	< 0.5	< 0.5	< 1.5	< 0.98	
Trip Blank								
	13-Jan-05	1	< 0.2	< 0.2	< 0.2	< 0.6	NA	
	9-Apr-05	2	< 0.2	< 0.2	< 0.2	< 0.6	NA	
	27-Jul-05	3	< 0.2	< 0.2	< 0.2	< 0.6	NA	
	27-Oct-05	4	< 0.2	< 0.2	< 0.2	< 0.6	NA	
	28-Feb-06	1	< 0.2	< 0.2	< 0.2	< 0.6	NA	
	20-Jun-06	2	< 0.2	< 0.2	< 0.2	< 0.6	NA	
	12-Sep-06	3	< 0.2	J 0.2	< 0.2	< 0.6	NA	
	13-Sep-06	3	< 0.2	< 0.2	< 0.2	< 0.6	NA	
	6-Nov-06	4	< 0.2	< 0.2	< 0.2	< 0.6	NA	
	7-Nov-06	4	< 0.2	< 0.2	< 0.2	< 0.6	NA	
	7-Feb-07	1	< 1.0	< 1.0	< 5.0	< 3.0	NA	
	8-Feb-07	1	< 1.0	< 1.0	< 5.0	< 3.0	NA	
	27-Jun-07	2	< 1.0	< 1.0	< 5.0	< 3.0	NA	
	26-Jun-07	2	< 1.0	< 1.0	< 5.0	< 3.0	NA	
	4-Dec-07	4	< 1.0	< 1.0	< 5.0	< 3.0	NA	
	5-Dec-07	4	< 1.0	< 1.0	< 5.0	< 3.0	NA	
	18-Feb-08	1	< 1.0	< 1.0	< 5.0	< 3.0	NA	
	5-May-08	2	< 1.0	< 1.0	< 5.0	< 3.0	NA	
	22-Jul-08	3	< 1.0	< 1.0	< 5.0	< 3.0	NA	
	23-Jul-08	3	< 1.0	< 1.0	< 5.0	< 3.0	NA	
	29-Oct-08	4	< 0.2	< 0.2	< 0.2	< 0.6	NA	
	29-Oct-08	4	< 0.2	< 0.2	< 0.2	< 0.6	NA	
	15-Jan-09	1	< 0.9	< 0.8	< 0.8	< 0.9	NA	
	5-Apr-09	2	< 0.9	< 0.8	< 0.8	< 0.9	NA	
	7-Apr-09	2	< 0.9	< 0.8	< 0.8	< 0.9	NA	
	21-Jul-09	3	< 0.9	< 0.8	< 0.8	< 0.9	NA	
	23-Jul-09	3	< 0.9	< 0.8	< 0.8	< 0.9	NA	
	8-Nov-09	4	< 0.9	< 0.8	< 0.8	< 0.9	NA	
	10-Nov-09	4	< 0.9	< 0.8	< 0.8	< 0.9	NA	
	11-Feb-10	1	< 0.5	< 0.5	< 0.5	< 1.5	NA	
	11-Feb-10	1	< 0.5	< 0.5	< 0.5	< 1.5	NA	
	14-Apr-10	2	< 0.5	< 0.5	< 0.5	< 1.5	NA	
	21-Apr-10	2	< 0.5	< 0.5	< 0.5	< 1.5	NA	
	7-Dec-10	4	< 0.5	< 0.5	< 0.5	< 1.5	NA	
	8-Dec-10	4	< 0.5	< 0.5	< 0.5	< 1.5	NA	
	30-Nov-10	4	< 0.5	< 0.5	< 0.5	< 1.5	NA	
Trip Blank	16-Mar-11	1	< 0.5	< 0.5	< 0.5	< 1.5	NA	
TB-02	17-Mar-11	1	< 0.5	< 0.5	< 0.5	< 1.5	NA	
TB-03	18-Mar-11	1	< 0.5	< 0.5	< 0.5	< 1.5	NA	

LEGEND

ug/L = micrograms per liter
NJGWQS = New Jersey Groundwater Quality Standards
ROD: Record of Decision
NA = Not Applicable
NS = Not Sampled
ND: No Detection
duplicate = Duplicate sample
Concentration exceeds NJGWQS **1.2**
B: Analyte also detected in blank
J: Estimated value. Value is greater than or equal to the Method Detection Limit (MDL)
and less than the Limit of Quantitation (LOQ)

NOTES

(1) Low flow sampling initiated 1st quarter 2002
(2) GEI series wells are piezometers installed by Weston
(3) GEI series wells, MW-19-3, and MW-19-4 are not sampled under revised groundwater monitoring program effective 1Q05.
(4) Recovery of initial DEHP analysis was above QC limits in the LCS. Sample was re-extracted and DEHP was again above the QC limits in the LCS/LCSD.
However, DEHP was not detected in the re-analysis of the sample. The data reported here is from the re-analysis of the sample.
(5) Recovery of initial DEHP analysis was above QC limits in the LCS. Sample was re-extracted and DEHP was again above the QC limits in the LCS/LCSD.
Comparable data was observed beween the two extractions. The data reported here is from the initial extraction of the sample.
(6) NJGWQS for toluene lowered August 2007

TABLE 5
Dayco Corporation/L.E. Carpenter Superfund Site
Quarterly Groundwater Monitoring - MNA Analytical Data

Well ID	Sampling Event	Heterotrophic Plate Count	TSS	TDS	Nitrate Nitrogen	Ammonia Nitrogen	Phosphorus (total)	Sulfate[1]	Methane	Dissolved Lead
	UNITS	cfu/ml	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l
NEW JERSEY GROUNDWATER QUALITY STANDARDS CLASS IIA		NCS	NCS	500	NCS	NCS	NCS	250	NCS	.005[2]
MW-19	1Q04	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2Q04	80	30	***589***	ND	ND	0.054	3.6 J	150	NS
	3Q04	630	30.9	***553***	ND	ND	0.12	1.7 J	230	NS
	1Q05	350	17.2	347	0.22	ND	ND	7.4	230	NS
	2Q05[L]	390	10.8 J	413	2.8	ND	ND	33.3	3.0 J	NS
	2Q05[U]	1,400	15	455	3	ND	ND	30	2.0 J	NS
	3Q05	3	67	***1,070***	0	1.3	ND	6	33	NS
	4Q05	120	23	***620***	1	0.88	ND	37	19	NS
	1Q06	25	36	***559***	ND	ND	ND	3.3 J	140	NS
	2Q06	56	44	460	ND	0.43 J	ND	3.2 J	95	ND
Dilution factor for Methane 5	3Q06	60	13	435	ND	0.43 J	ND	5	310	ND
Dilution factor for Methane 100	4Q06	20	16	411	ND	ND	0	2.9 J	1,700	ND
	1Q07	140	7	340	ND	ND	ND	ND	540	ND
	2Q07	180	20	***1,100***	ND	0.62	ND	ND	380	ND
	3Q07	1,200	23	***710***	ND	0.76	0	ND	300	ND
	4Q07	FS	30	500	ND	0.64	0	ND	680	ND
	1Q08	150	3.6	190	2	ND	ND	25	ND	ND
Dilution factor for Dissolved Lead 5	2Q08	1,900	26	***1,200***	ND	0.52	ND	ND	650	ND
	3Q08	740	6.2	***820***	ND	0.57	ND	ND	510	ND
Dilution for methane 50	4Q08	120	8.0 J	***662***	ND	0.60	0.14	ND	4,000	ND
Dilution for methane 10	1Q09	13	25.2	356	ND	ND	ND	3.6 J	2,200	ND
Dilution for methane 50	2Q09	36	12.8	***670***	ND	ND	ND	2.4 J	4,800	ND
	3Q09	25	11.2 J	353	ND	ND	ND	ND	5,300	ND
MW-19R										
Dilution factor for Nitrate and Sulfate 5	4Q10	7200	22	***880***	ND	0.13	0.086	70	280	ND
Dilution factor for Nitrate and Sulfate 5	1Q11	290	ND	***1000***	3.5	0.044	ND	81	ND	ND
MW-19-5	1Q04	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2Q04	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3Q04	180	14	***942***	0.06 J	ND	ND	15.7	2100	NS
	1Q05	380	3.6 J	174	0.49	ND	ND	15.8	34	NS
	2Q05[L]	3000	3.6 J	177	ND	ND	ND	12	380	NS
	2Q05[U]	100	3.6 J	141	0.43	ND	ND	8.7	ND	NS
	3Q05	69	6.8 J	463	ND	ND	ND	7.7	1700	NS
	4Q05	58	ND	144	0.38	ND	ND	12.8	3.8 J	NS
	1Q06	12	ND	287	0.97 J	ND	ND	11.2	290	NS
	2Q06	22	9.2 J	190	0.19	ND	ND	14.2	150	ND
Dilution factor for Methane 10	3Q06	30	ND	275	0.12	ND	ND	10.2	700	ND
Dilution factor for Methane 10	4Q06	620	ND	236	0.1	ND	ND	10.9	640	ND
	1Q07	240	7	340	ND	0.51	ND	ND	500	**0.011**
	2Q07	91	18	350	ND	0.13	ND	ND	570	ND
Dilution factor for Methane 4	3Q07	110	7.8	360	ND	ND	ND	ND	840	ND
	4Q07	FS	5.1	240	0.13	0.14	0.12	7.8	370	ND
	1Q08	380	1.9	120	0.16	ND	ND	7.2	ND	ND
	1Q08D	170	1.8	120	0.15	ND	ND	7.2	ND	ND
	2Q08	560	3.3	370	0.15	ND	ND	13	340	ND
Dilution factor for Methane 4	3Q08	100	16	***560***	ND	0.3	ND	ND	1,500	ND
	4Q08	46	ND	164	0.35	ND	ND	15.1	59	ND
Dilution factor for Methane 2	1Q09	33	ND	143	0.047 J	ND	ND	11	530	ND
Dilution factor for Methane 5	2Q09	27	ND	250	0.069 J	ND	ND	6.4	1,300	ND
Dilution factor for Methane 5	2Q09D	110	ND	250	0.071 J	2.6	ND	6.4	1,400	ND
Dilution factor for Methane10	3Q09	25	3.2 J	399	ND	ND	ND	6.7	3400	ND
MW-19-5R										
Dilution factor for Nitrate and Sulfate 5, Methane 250	4Q10	4800	42	***600***	***ND***	0.37	0.18	14	4600	ND
Dilution factor for Nitrate and Sulfate 5, Methane 100	1Q11	1100	9	***630***	0.7	0.32	0.071	82	5000	ND
MW-19-6	1Q04	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2Q04	35	10.4 J	***1670***	1.6	ND	ND	37.3	140	NS
	3Q04	110	18.8	***1240***	1.1	ND	0.062	38.3	140	NS
	1Q05	82	11.2 J	***544***	1.7	ND	ND	44	130	NS
	2Q05[L]	23	18	***1180***	1.3	0.29 J	ND	33.5	44	NS
	2Q05[U]	160	ND	***1190***	1	ND	ND	32.7	96	NS
	3Q05	90	40.8	***1520***	1.1	ND	ND	35	38	NS
	4Q05	43	10.8 J	***940***	3.5	ND	ND	47.8	43	NS
	1Q06	14	4.4 J	***634***	1.8	ND	ND	36.6	50	NS
	2Q06	14	ND	***802***	2	ND	ND	38.3	44	ND
	2Q06D	15	ND	***790***	2	ND	ND	37.7	45	ND
	3Q06	75	4.4 J	***682***	2.6	ND	ND	37.1	32	ND
	4Q06	240	ND	***574***	2.3	ND	ND	38.3	31	ND
	1Q07	62	5.3	490	2.4	ND	ND	34	21	ND
	2Q07	70	8.7	***1900***	2.9	ND	ND	48	230	ND
	3Q07	100	2.6	***820***	2	ND	ND	40	68	ND
	4Q07	FS	3.2	***710***	2.3	ND	ND	36	87	ND
	1Q08	120	2.6	***650***	1.1	ND	ND	28	78	ND
	2Q08	22	2.9	***1,200***	1.9	ND	ND	32	27	ND
	3Q08	140	6.2	***1,400***	1.3	ND	ND	34	140	ND
	4Q08	31	ND	***938***	2.9	ND	ND	36.4	110	ND
	1Q09	8	ND	***600***	1.5	ND	ND	32.2	89	ND
	2Q09	15	3.6 J	***1,380***	2.2	ND	ND	37.4	140	ND
	3Q09	6	4.0 J	***938***	1.5	ND	ND	36.1	230	ND
Dilution factor for Nitrate and Sulfate 5	1Q11	260	8	***1,200***	0.69	0.028	ND	38	60	ND

TABLE 5
Dayco Corporation/L.E. Carpenter Superfund Site
Quarterly Groundwater Monitoring - MNA Analytical Data

Well ID	Sampling Event	Heterotrophic Plate Count	TSS	TDS	Nitrate Nitrogen	Ammonia Nitrogen	Phosphorus (total)	Sulfate[1]	Methane	Dissolved Lead
	UNITS	cfu/ml	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l
NEW JERSEY GROUNDWATER QUALITY STANDARDS CLASS IIA		NCS	NCS	500	NCS	NCS	NCS	250	NCS	.005[2]
MW-19-6R										
Dilution factor for Nitrate and Sulfate 5	4Q10	46000	9	***620***	1.5	0.012	ND	39	7.6	ND
Dilution factor for Nitrate and Sulfate 5	1Q11	260	8	***1200***	0.69	0.028	ND	38	60	ND
MW-19-7	1Q04	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2Q04	110	6.8 J	***2110***	0.21	ND	ND	47.2	5200	NS
	2Q04D	88	9.2 J	***2040***	0.21	0.15 J	ND	37.3	5400	NS
	3Q04	2000	4.4 J	***1920***	1.5	ND	ND	64.4	2400	NS
Dilution factor for Methane 250	1Q05	75	6.0 J	***774***	3.2	ND	ND	29.1	10000	NS
Dilution factor for Methane 250	1Q05D	77	7.2 J	***754***	3.2	ND	ND	30.5	11000	NS
	2Q05^{L}	32	54	472	ND	0.50 J	0.45	ND	13000	NS
	2Q05^{U}	41	48	481	ND	0.35 J	0.32	ND	10000	NS
	3Q05^{L}	17	45.6	***1450***	ND	ND	0.3	19.2	2900	NS
	3Q05^{U}	17	31.6	***1280***	0.22	0.29 J	0.1	25.7	1600	NS
Dilution factor for Methane 250	4Q05	16	32	***926***	0.16	0.5	0.23	8.9	7700	NS
	1Q06	14	33.2	***621***	ND	ND	0.3	2.2 J	10000	NS
	1Q06D	10	36.8	***628***	ND	ND	0.3	1.6 J	10000	NS
Dilution factor for Methane 200	2Q06	68	16.8	***655***	0.87	ND	0.16	12.9	11000	ND
Dilution factor for Methane 100	3Q06	79	9.2 J	***799***	2.1	ND	0.15	15.1	8600	ND
Dilution factor for Methane 100	4Q06	600	4.4 J	***568***	3.4	ND	ND	31.3	5600	ND
Dilution factor for Methane 4	1Q07	38	18	420	0.59	ND	0.31	11	1200	ND
Dilution factor for Methane 5	1Q07D	40	19	440	0.69	ND	0.31	12	1300	ND
	2Q07	130	4.4	***610***	0.25	ND	ND	12	530	ND
	3Q07	890	1.8	***590***	0.39	ND	ND	16	120	ND
	4Q07	FS	2.2	***1200***	2.6	0.23	ND	21	170	ND
	1Q08	180	6.7	***1600***	3.2	ND	ND	24	300	ND
	2Q08	52	6.8	***1100***	0.24	0.12	ND	17	430	ND
	3Q08	340	15	***560***	ND	0.11	0.11	ND	400	ND
Dilution factor for Methane 5	4Q08	270	3.25	***617***	1.1	ND	ND	20	550	ND
Dilution factor for Methane 5	4Q08D	110	ND	***625***	1.1	ND	ND	20.6	570	ND
	1Q09	34	4.0 J	***2280***	1.9	ND	ND	31.9	280	ND
	2Q09	98	23.6	***3010***	1.1	ND	ND	31.2	400	ND
	3Q09	250	5.2 J	***1250***	0.33	ND	ND	29	740	ND
MW-19-7R										
Dilution factor for Nitrate and Sulfate 5	4Q10	2800	10	***560***	2.1	0.2	0.23	35	35	ND
Dilution factor for Nitrate and Sulfate 5, Methane 100	1Q11	43	10	***1300***	ND	0.28	0.26	16	3300	ND
MW-19-8	2Q04	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2Q04	45	14.4	***1120***	ND	ND	0.15	22.8	79	NS
	3Q04	15	7.2 J	***573***	ND	0.24 J	0.12	11.5	790	NS
Dilution factor for Methane 5	1Q05	91	25.2	***1150***	ND	ND	0.18	16.3	510	NS
	2Q05	270	20	***796***	ND	ND	ND	23.7	5.3	NS
	3Q05	ND	8.8 J	876	0.33	0.26 J	ND	20.3	74	NS
	4Q05	210	4.4 J	***926***	0.88	ND	ND	24.6	24	NS
Dilution factor for Nitrate an Sulfate is 5	1Q11	40	4	***1900***	2.6	0.026	ND	37	1.2	NS
MW-19-9D	1Q04	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2Q04	210	6.0 J	***621***	0.14	0.33 J	ND	18.2	1300	NS
	3Q04	NS	NS	NS	NS	NS	NS	NS	NS	NS
	1Q05	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2Q05	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3Q05	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4Q05	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-19-10	1Q04	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2Q04	34	6.8 J	***563***	ND	ND	ND	18	2.6 J	NS
	3Q04	18	10.4 J	***908***	ND	ND	ND	19.2	3.3 J	NS
	3Q04D	22	10.8 J	***890***	ND	0.24 J	ND	17.9	2.9 J	NS
	1Q05	29	5.2 J	***625***	ND	ND	ND	16.9	74	NS
	2Q05^{L}	170	32.4	***653***	ND	ND	ND	18.1	48	NS
	2Q05^{U}	93	32	***691***	ND	0.12 J	ND	18.3	48	NS
	3Q05	26	10.4 J	***560***	ND	ND	ND	16	ND	NS
	4Q05	56	17.2	***654***	ND	ND	ND	15.3	3.2 J	NS
MW-19-11	1Q05	940	4.8 J	***4750***	2.2	ND	ND	65.6	9.9	NS
	2Q05^{L}	NS	64	731	ND	0.42 J	ND	18	930	NS
	2Q05^{U}	14	27.2	***740***	ND	ND	ND	17.2	1200	NS
	3Q05	63	106	***555***	ND	ND	0.11	21.5	26	NS
Dilution factor for Methane 10	4Q05	80	15.2	***854***	ND	0.32 J	ND	25.5	440	NS
MW-19-12[3]	2Q06	4,000	11.2 J	***548***	0.048 J	ND	ND	15.1	4.8 J	ND
Dilution factor for Methane 5	3Q06	170	6.4 J	***822***	0.36	ND	ND	22.9	170	ND
	4Q06	2	4.4 J	***716***	0.22	ND	ND	21.3	130	ND
	4Q06D	2	ND	***718***	0.17	ND	ND	21.8	130	ND
	1Q07	4	5.5	400	0.56	0.12	ND	20	ND	ND
	2Q07	55	ND	240	0.93	ND	ND	13	ND	ND
	2Q07D	8	ND	270	0.93	ND	ND	13	ND	ND
	3Q07	73	ND	290	0.89	ND	ND	13	ND	ND

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Dayco Corporation/L.E. Carpenter Superfund Site
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Well ID	Sampling Event	Heterotrophic Plate Count	TSS	TDS	Nitrate Nitrogen	Ammonia Nitrogen	Phosphorus (total)	Sulfate[(1)]	Methane	Dissolved Lead
	UNITS	cfu/ml	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l
NEW JERSEY GROUNDWATER QUALITY STANDARDS CLASS IIA		NCS	NCS	500	NCS	NCS	NCS	250	NCS	.005[(2)]
	4Q07	FS	3	260	0.9	ND	ND	11	ND	ND
	1Q08	9	ND	160	0.84	ND	ND	5.7	ND	ND
	2Q08	ND	1.1	220	1	ND	ND	10	ND	ND
	3Q08	2	1.7	220	0.72	ND	ND	8.1	ND	ND
	4Q08	7	ND	269	0.79	ND	ND	16.6	ND	ND
	1Q09	4	ND	170	1.1	ND	ND	18.3	ND	ND
	2Q09	320	5.2 J	334	0.94	ND	ND	18.5	ND	ND
	3Q09	18	ND	261	0.9	6.2	ND	13.3	ND	ND
	4Q09	ND	ND	263	0.81	ND	ND	15.3	ND	ND
Dilution factor for Nitrate an Sulfate is 5	4Q10	ND	ND	280	0.78	ND	0.057	15	ND	ND
Dilution factor for Nitrate an Sulfate is 5	1Q11	4	14	280	1	0.028	ND	11	ND	ND
MW-19-13										
Dilution factor for Nitrate and Sulfate 5	4Q10	5,600	110	***560***	ND	0.33	0.19	26	9,600	ND
Dilution factor for Nitrate and Sulfate 5, Methand 50	1Q11	9,000	130	470	3.5	0.059	0.17	66	2,000	ND
MW-19-14										
Dilution factor for Nitrate and Sulfate 5, Methane 2	4Q10	31,000	24	***870***	0.32	0.16	ND	65	95	ND
Dilution factor for Nitrate and Sulfate 5, Methane 2	4Q10D	27,000	24	***970***	0.36	0.014	ND	67	37	ND
Dilution factor for Nitrate and Sulfate 5	1Q11	320	ND	***940***	3.5	0.037	ND	93	ND	ND
Dilution factor for Nitrate and Sulfate 5	1Q11D	340	ND	***920***	3.4	0.042	ND	93	ND	ND
MW-19-15										
Dilution factor for Nitrate and Sulfatae 5	4Q10	88,000	21	***510***	0.55	0.13	ND	34	6	ND
Dilution factor for Nitrate an Sulfate is 5	1Q11	2,200	7	***1400***	3.4	0.015	ND	54	ND	ND
MW-19-16										
Dilution factor for Nitrate and Sulfatae 5	4Q10	2,100	9	***980***	0.7	0.016	ND	87	ND	ND
Dilution factor for Nitrate an Sulfate is 5	1Q11	740	ND	***950***	4.6	0.012	ND	100	ND	ND
MW-19-17										
Dilution factor for Nitrate and Sulfatae 5	4Q10	130	9	380	ND	0.73	0.13	4.8	980	ND
Dilution factor for Nitrate an Sulfate is 5	1Q11	64	14	***1300***	ND	0.91	0.092	13	33	ND
MW-8										
Dilution factor for Methane 10	3Q08	ND	66	300	ND	0.68	0.4	ND	3,000	ND
Dilution factor for Methane 20	4Q08	5,200	33.6	94.5	ND	0.35 J	ND	1.9 J	1,800	ND
Dilution factor for Methane 10	1Q09	51	56.8	270	ND	0.64	0.16	ND	2,600	ND
Dilution factor for Methane 50	2Q09	450	28	174	ND	ND	ND	ND	6,100	ND
	3Q09	75	40	407	ND	ND	0.13	2.5 J	2,400	ND
Dilution factor for Methane 20	4Q09	84	42.5	191	ND	0.53 J	ND	ND	5,600	ND
Dilution factor for Nitrate, and Ammonia 5,TDS & TSS 2	1Q10	46	62	280	0.35	0.44	0.24	ND	1,500	ND
Dilution factor for Nitrate and Methane 5, TDS 20	2Q10	240	36	ND	ND	0.24	0.24	ND	140	ND
Dilution factor for Nitrate 5, Methane 100	3Q10	100	70	490	ND	0.61	0.29	7.7	4,900	ND
Dilution for Methane 100, Nitrate and Sulfate 5	4Q10	44	58	200	ND	0.27	0.15	ND	1,800	ND
Dilution for Methane 50, Nitrate and Sulfate 5	1Q11	57	31	500	0.089	0.35	0.18	ND	2,000	ND
MW-25R	2Q06	1,100	18.8	340	ND	0.24 J	ND	2.9 J	140	ND
	3Q06	>5700	279	329	ND	0.24 J	0.14	3.3 J	30	ND
	4Q06	1,000	16.8	331	ND	ND	ND	6.2	25	ND
	1Q07	240	49	300	ND	0.12	ND	ND	29	ND
	2Q07	>5700	100	340	ND	0.15	ND	5.9	33	ND
	2Q07D	>5700	100	350	ND	0.11	ND	6.4	32	ND
	3Q07	>5700	10	260	ND	ND	ND	14	ND	ND
	4Q07	FS	490	380	ND	0.41	0.43	10	ND	ND
	1Q08	>5700	140	360	ND	0.13	0.17	5.4	55	ND
	2Q08	>5700	200	330	ND	0.15	0.23	ND	130	ND
	3Q08	ND	68	380	ND	0.14	ND	ND	12	ND
	4Q08	>5700	ND	243	ND	ND	ND	16	3.5 J	ND
	1Q09	1,500	36.8	344	ND	ND	ND	36.5	57	ND
	2Q09	>5700	98.8	362	ND	ND	ND	9.4	7.6 J	ND
	3Q09	2,100	32.4	412	ND	ND	ND	8.5	100	ND
	4Q09	1,600	160	198	ND	0.42 J	ND	12	30	ND
Dilution factor for Nitrate 5, TDS 2	1Q10	580	95	430	0.35	0.18	0.14	6.9	41	ND
Dilution factor for Nitrate 5, TDS 20, TSS 4	2Q10	1,700	160	ND	ND	0.068	0.20	1.4	36	ND
Dilution factor for Nitrate 5	3Q10	3,800	65	650	ND	0.11	ND	30	1.5	ND
Dilution factor for Nitrate and Sulfate 5	4Q10	920	22	350	ND	0.099	ND	13	8.5	ND
Dilution factor for Nitrate and Sulfate 5	1Q11	6,400	23	420	0.09	0.16	ND	15	36.0	ND
MW-27s	2Q06	NR	5180	630	ND	0.26 J	4.8	43.3	20	ND
	3Q06	>5700	3850	***798***	ND	ND	1.4	108	3.7 J	ND
	4Q06	>5700	166	***753***	0.16	ND	0.82	116	2.3 J	ND
	1Q07	>5700	580	***650***	ND	ND	0.19	91	ND	ND
	2Q07	>5700	48	***640***	ND	ND	3.5	97	ND	ND
	3Q07	270	150	***630***	ND	ND	0.12	84	ND	ND
	4Q07	FS	260	***620***	0.16	0.45	ND	87	22	ND
	1Q08	>5700	850	***530***	0.65	ND	0.74	78	ND	ND
	2Q08	>5700	770	490	0.19	ND	0.91	67	ND	ND
Dilution factor for Phosphorus 5	3Q08	560	1,400	***620***	ND	0.14	17	61	11	ND
	4Q08	390	66.4	***571***	0.2	ND	.085 J	68.8	ND	ND

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Well ID	Sampling Event	Heterotrophic Plate Count	TSS	TDS	Nitrate Nitrogen	Ammonia Nitrogen	Phosphorus (total)	Sulfate[1]	Methane	Dissolved Lead
	UNITS	cfu/ml	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l
NEW JERSEY GROUNDWATER QUALITY STANDARDS CLASS IIA		NCS	NCS	500	NCS	NCS	NCS	250	NCS	.005[2]
	1Q09	190	1,200	***517***	0.55	ND	0.27	62.5	ND	0.0283
	2Q09	81	253	454	0.96	ND	ND	52.6	ND	ND
	3Q09	8	684	482	0.38	ND	ND	43.9	ND	ND
	4Q09	23	300	***721***	0.5	ND	ND	47.9	ND	ND
Dilution factor for Nitrate 5	1Q10	18	64	***600***	1.3	0.1	0.089	54	ND	ND
Dilution factor for Nitrate 5, TDS 20	2Q10	30	32	400	1.1	ND	ND	49	ND	ND
Dilution factor for Nitrate 5	3Q10	70	28	***1100***	0.29	ND	0.094	42	ND	ND
Dilution factor for Nitrate and Sulfate 5	4Q10	12	7	***680***	1.1	ND	ND	49	ND	ND
Dilution factor for Nitrate and Sulfate 5	1Q11	2,000	14	500	2.7	0.032	ND	38	ND	ND
MW-28s	2Q06	6	35.2	350	ND	0.35 J	0.25	2.6 J	3,100	ND
Dilution factor for Methane 200	3Q06	1,300	22	460	ND	0.26 J	0.37	ND	3,200	ND
Dilution factor for Methane 200	3Q06D	1,500	22	468	ND	ND	0.37	1.7J	3,100	ND
Dilution factor for Methane 100	4Q06	1	25	347	ND	ND	0.43	2.0 J	4,400	ND
	1Q07	460	180	350	ND	ND	0.42	ND	170	ND
	1Q07D	230	93	360	ND	ND	0.43	ND	810	**0.0051**
Dilution factor for Methane 10	2Q07	78	49	400	ND	0.14	0.34	ND	1,600	ND
Dilution factor for Methane 4	3Q07	ND	50	350	ND	ND	0.34	ND	1,100	ND
Dillution for Methane is 40	4Q07	320	42	330	ND	0.19	0.38	ND	1,900	ND
	1Q08	80	31	250	ND	0.14	0.36	ND	570	ND
Dilution for Methane is 10	2Q08	11	44	360	ND	0.19	ND	ND	1,400	ND
Dilution factor for Methane 4	3Q08	ND	52	340	ND	0.17	0.4	ND	1	**0.0056**
Dilution factor for Methane 20	4Q08	82	23.6	321	ND	ND	0.31	2.3 J	1,800	ND
Dilution factor for Methane 200	1Q09	9	38.4	356	ND	0.27 J	0.32	ND	5,000	ND
Dilution factor for Methane 5	2Q09	530	6.0 J	327	ND	ND	0.24	5.8	1,000	ND
Dilution factor for Methane 50	3Q09	2	28.8	***679***	ND	0.36 J	0.26	ND	5,200	ND
Dilution factor for Methane 2	4Q09	54	17.2	408	ND	ND	0.16	4.2 J	460	ND
Dilution factor for Nitrate 5, TDS & TSS 2, Methane 50	1Q10	240	24.0	330	0.34	0.22	0.4	ND	2,100	ND
Dilution factor for Nitrate 5, TDS 2, Methane 50	1Q10D	210	ND	330	ND	0.21	0.4	ND	2,100	ND
Dilution for Methane 100, TSS & TDS 2, Nitrate 5	2Q10	71	18	240	ND	0.10	0.40	1.1	1,600	ND
Dilution for Methane 50, Nitrate 5	3Q10	42	21	***510***	ND	0.20	0.35	5.2	900	ND
Dilution for Methane 50, Nitrate 5	3Q10D	44	19	440	ND	0.19	0.37	5.4	910	ND
Dilution factor for Nitrate and Sulfate 5	4Q10	1,200	19	430	ND	0.34	0.36	ND	1,200	ND
Dilution factor for Nitrate and Sulfate 5, Methane 50	1Q11	360	20	370	ND	0.22	0.38	2.6	1,700	ND
Dilution factor for Nitrate and Sulfate 5, Methane 50	1Q11D	300	15	420	ND	0.22	0.37	ND	1,600	ND
MW-28i										
Dilution factor for Methane 10	2Q06	290	28	367	0.047 J	ND	0.22	2.2 J	1,900	ND
Dilution factor for Methane 100	3Q06	>5,700	42.8	338	ND	ND	0.19	3.5 J	1,500	ND
Dilution factor for Methane 100	4Q06	440	15.6	335	ND	ND	0.22	3.0 J	1,500	ND
	1Q07	110	34	380	0.1	0.2	0.35	ND	410	ND
Dilution factor for Methane 4	2Q07	24	23	330	ND	0.27	0.29	ND	710	ND
	3Q07	37	37	300	ND	0.28	0.27	ND	560	ND
	4Q07	160	34	360	ND	0.47	0.64	5.1	370	ND
	1Q08	ND	25	290	ND	0.37	0.29	ND	170	ND
Dilution factor for Methane 10	2Q08	17	38	***560***	ND	0.31	0.23	ND	870	ND
	3Q08	51	29	310	ND	0.25	280	ND	410	ND
Dilution factor for Methane 5	4Q08	24	20.8	360	ND	0.54 J	0.23	6.7	500	ND
Dilution factor for Methane 10	1Q09	3	31.6	399	ND	.42 J	0.27	ND	1,800	ND
Dilution factor for Methane 10	1Q09D	4	35.2	415	ND	0.54 J	0.26	ND	1,700	ND
	2Q09	89	13.6	351	ND	ND	0.22	7.7	110	ND
Dilution factor for Methane 10	3Q09	ND	20	***542***	ND	1.1	0.21	2.6 J	2,100	ND
	4Q09	4	18	445	ND	0.38 J	0.11	7.8	190	ND
	4Q09D	4	19.6	417	ND	0.47 J	0.13	7.8	180	ND
Dilution factor for Nitrate 5, TDS & TSS 2, Methane 50	1Q10	10	40	470	ND	0.49	0.34	0.96	1,400	ND
Dilution for Methane 100, TSS & TDS 2, Nitrate 5	2Q10	8	16	260	ND	0.21	0.32	2.1	800	ND
Dilution for Methane 100, TSS & TDS 2, Nitrate 5	3Q10	5.5	23	420	ND	0.33	0.29	8.5	210	ND
Dilution factor for Nitrate and Sulfate 5	4Q10	6.0	26	470	ND	0.55	0.32	2.7	620	ND
Dilution factor for Nitrate and Sulfate 5, Methane 20	1Q11	5.0	15	430	ND	0.42	0.29	5.8	500	ND
MW-29s	2Q06	250	58.8	***504***	ND	11.9	0.45	4.0 J	1,200	ND
Dilution factor for Methane 250	3Q06	>5700	54	***546***	ND	9.9	0.32	1.9 J	5,000	ND
Dilution factor for Methane 100	4Q06	190	35.6	***509***	ND	8.3	0.29	3.9 J	5,200	ND
	1Q07	30	41	***510***	0.14	7.5	0.34	ND	450	**0.0084**
Dilution factor for Methane 4	2Q07	150	56	490	ND	8.3	0.29	ND	1,000	ND
Dilution factor for Methane 10	3Q07	1,900	54	***520***	ND	8.1	0.4	ND	2,500	ND
Dillution for Methane 10	4Q07	FS	66	500	ND	9.3	0.44	ND	3,100	**0.014**
Dillution for Lead 5	1Q08	93	60	***510***	ND	7.5	0.34	ND	2,000	ND
Dillution for Lead 5	1Q08D	120	38	***510***	ND	7.6	0.35	ND	1,800	ND
Dilution for Methane 10	2Q08	65	40	490	ND	8.2	0.3	ND	2,100	ND
Dilution factor for Methane 4	3Q08	130	20	460	ND	7.7	0.41	ND	1,700	ND
Dilution factor for Methane 50	4Q08	52	37.2	455	ND	7.2	0.35	ND	4,400	ND
Dilution factor for Methane 50	4Q08D	56	41.6	462	ND	7.2	0.34	ND	4,600	ND
Dilution factor for Methane 200	1Q09	1,600	58.8	425	ND	7.2	0.32	3.0 J	6,100	ND
Dilution factor for Methane 50	2Q09	200	58	464	ND	5.8	0.28	7.3	4,000	ND
Dillution factor for Methane 100	3Q09	21	47.2	***542***	ND	7.5	0.31	3.3 J	4,800	ND
Dillution factor for Methane 20	4Q09	3	39	436	ND	8.9	0.25	ND	5,800	ND
Dilution for Methane 50, TSS & TDS 2, Nitrate and Ammonia 5	1Q10	110	62	440	0.36	6.4	0.38	2.1	2,800	ND
Dillution factor for Methane 100, TDS 20, TSS 4, Nitrate 5	2Q10	110	46	440	ND	4.2	0.39	1.5	6,200	ND

TABLE 5
Dayco Corporation/L.E. Carpenter Superfund Site
Quarterly Groundwater Monitoring - MNA Analytical Data

Well ID	Sampling Event	Heterotrophic Plate Count	TSS	TDS	Nitrate Nitrogen	Ammonia Nitrogen	Phosphorus (total)	Sulfate[1]	Methane	Dissolved Lead
	UNITS	cfu/ml	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l
NEW JERSEY GROUNDWATER QUALITY STANDARDS CLASS IIA		NCS	NCS	500	NCS	NCS	NCS	250	NCS	.005[2]
Dilution for Methane 100, Ammonia & Nitrate 5	3Q10	15	45	***510***	ND	8.9	0.37	7.0	1,800	ND
Dilution for Methane 100, nitrate and sulfate 5, Ammonia 10	4Q10	23	27	420	ND	10	0.41	2.7	4,300	ND
Dilution factor for Nitrate and Sulfate 5	1Q11	470	15	***540***	0.093	4.3	ND	4.1	1,800	ND
MW-30s	2Q06	2,200	75.6	348	ND	0.86	0.17	5.2	3,800	ND
Dilution factor for Methane 200	3Q06	>5700	132	457	ND	0.89	0.32	ND	2,500	ND
Dilution factor for Methane 100	4Q06	>5700	147	448	ND	1.1	0.24	5.5	6,500	ND
Dilution factor for Methane 10	2Q07	>5700	650	350	ND	0.94	1.6	ND	1,800	ND
Dilution factor for Methane 4	3Q07	>5700	220	440	ND	1	0.34	ND	1,700	ND
Dilution factor for Methane 4	3Q07D	>5700	180	400	ND	1.1	0.33	ND	1,500	ND
Dilution factor for Methane 10	4Q07	>5700	120	***520***	ND	1.3	0.22	ND	1,900	ND
Dilution factor for Methane 4	1Q08	1,100	2,300	410	ND	0.97	1.2	ND	1,300	ND
Dilution factor for Methane 10	2Q08	>5700	36	320	ND	0.93	0.26	ND	1,700	ND
Dilution factor for Methane 4	3Q08	ND	36	390	ND	2.60	0.29	ND	1,800	ND
Dilution factor for Methane 50	4Q08	2,300	18	401	ND	1.30	0.19	ND	4,100	ND
	1Q09	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen
Dilution factor for Methane 20	2Q09	210	40	464	ND	1.3	0.14	2.0 J	3,700	ND
Dilution factor for Methane 50	3Q09	720	38.8	461	ND	1.6	0.21	ND	4,200	ND
Dilution factor for Methane 20	4Q09	720	33.2	457	ND	1.3	ND	ND	4,400	ND
	1Q10	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen
Dilution for Methane 200, TSS & TDS 2, Nitrate 5	2Q10D	2,700	50	470	ND	0.93	0.26	ND	3,300	ND
Dilution for Methane 100, TSS & TDS 2, Nitrate 5	2Q10	12,000	48	440	ND	0.91	0.26	ND	3,200	ND
Dilution for Methane 100, Nitrate 5	3Q10	3,600	46	480	ND	1.0	0.32	4.9	1,600	ND
Dilution factor for Nitrate and Sulfatae 5	4Q10	120	31	460	ND	1.2	0.24	ND	4,200	ND
Dilution factor for Nitrate and Sulfatae 5	4Q10D	1,200	41	490	ND	1.2	0.27	ND	1,400	ND
Dilution factor for Nitrate and Sulfatae 5	1Q11	1,200	42	530	ND	0.038	0.26	5.5	1,600	ND
MW-30i	2Q06	>5700	18.8	369	ND	1.8	0.15	8.2	1,100	ND
Dilution factor for Methane 100	3Q06	290	41.6	414	ND	0.83	0.23	3.2 J	1,200	ND
Dilution factor for Methane 50	4Q06	40	17.2	456	ND	0.89	0.24	11.1	930	ND
Dilution factor for Methane 50	4Q06D	43	41.2	478	ND	ND	0.23	11.1	930	ND
Dilution factor for Methane 4	2Q07	36	34	300	ND	0.8	0.31	ND	680	ND
	3Q07	ND	41	430	ND	1	0.33	ND	97	ND
	4Q07	470	69	***530***	ND	1.1	0.45	ND	ND	ND
	1Q08	2	33	410	ND	1.2	0.34	ND	370	ND
	2Q08	23	27	***540***	ND	1	ND	ND	510	ND
	2Q08D	16	26	300	ND	1	0.29	ND	560	ND
Dilution factor for Methane 4	3Q08	ND	31	390	ND	1.3	0.38	ND	790	ND
Dilution factor for Methane 5	4Q08	6	21.6	411	ND	1.4	0.27	4.4 J	400	ND
	1Q09	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen
	2Q09	670	36.8	474	ND	1.3	0.19	5.9	270	ND
Dillution factor for Methane 2, Ammonia Nitrogen 2	3Q09	5	28.0	431	ND	1.3	0.26	4.3 J	660	ND
Dillution factor for Methane 2	3Q09D	6	24.8	444	ND	0.72	0.25	4.2 J	730	ND
	4Q09	13	24.0	448	ND	ND	0.14	6.1	170	ND
	1Q10	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen
Dilution for Methane 100, TSS & TDS 2, Nitrate 5	2Q10	130	42	460	ND	0.86	0.38	ND	2,100	ND
Dilution for Methane 50, Nitrate 5	3Q10	50	31	440	ND	1.1	0.39	5.6	640	ND
Dilution for Nitrate and Sulfate 5	4Q10	17	39	540	ND	1.1	0.35	5.1	65	ND
Dilution for Nitrate and Sulfate 5, Methane 10	1Q11	50	27	500	ND	ND	0.30	10.0	670	ND
MW-30d	2Q06	2,800	11.6	248	ND	0.30 J	ND	9.7	45	ND
	3Q06	>5700	6.4 J	288	0.043 J	ND	ND	10.6	5	ND
	4Q06	47	5.6 J	375	ND	ND	ND	12.5	22	ND
	2Q07	130	13	240	ND	0.11	ND	10	77	ND
	3Q07	78	9	260	ND	0.16	ND	11	ND	ND
	4Q07	FS	20	300	ND	0.24	0.11	11	ND	ND
	4Q07D	FS	20	270	ND	0.19	0.28	11	ND	ND
	1Q08	790	8	300	ND	0.12	ND	9.4	47	ND
	2Q08	420	12	370	ND	0.27	ND	5.3	140	ND
	3Q08	ND	9.2	280	ND	0.31	0.13	9.2	16	ND
	4Q08	40	9.2 J	309	ND	0.27 J	ND	12.7	ND	ND
	1Q09	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen
	2Q09	75	9.2 J	324	0.046 J	ND	ND	14.3	5 J	ND
	3Q09	9	6.4 J	321	ND	ND	ND	14.8	60	ND
	4Q09	7	5.2 J	331	0.1	ND	ND	15	ND	ND
Dilution factor for Nitrate 5, Methane 4	1Q10	38	11	350	ND	0.12	0.05	10	90	ND
Dilution factor for Methane 2, Nitrate 5, TDS 10	2Q10	33	6.0	110	ND	0.079	0.051	8.7	71	ND
Dilution factor for Nitrate 5	3Q10	8,300	15.0	300	ND	0.071	0.13	12	ND	ND
Dilution factor for Nitrate and Sulfate 5	4Q10	56	10.0	500	0.1	0.160	0.05	14	ND	ND
Dilution factor for Nitrate and Sulfate 5	1Q11	250	7.0	330	ND	0.920	ND	14	11	ND
MW-31s										
Dilution factor for Ammonia and Methane 10	2Q08	>5700	460	***810***	0.12	22	0.68	44	3,000	ND
Dilution factor for Ammonia and Methane 10	3Q08	ND	320	***1900***	ND	22	0.71	72	2,100	ND
Dilution factor for Sulfate 10 and Methane 50	4Q08	> 5700	11.5 J	***502***	ND	10.8	0.14	84.2	2,800	ND
Dilution factor for Methane 100	1Q09	620	35.2	***629***	ND	22.6	0.40	47.9	11,000	ND
Dilution factor for Sulfate and Methane 20	2Q09	> 5700	ND	***556***	0.056 J	6.4	ND	136	2,400	ND
Dilution factor for Methane 50	3Q09	6,800	36.80	***576***	ND	19.8	0.12	35.9	12,000	ND
Dilution factor for Sulfate 20, and Methane 20	4Q09	100,000	7.6 J	***619***	ND	9.1	ND	187.0	3,200	ND
Dilution factor for Nitrate 5, Ammonia 10, TSS 2, Methane 500	1Q10	230	54.00	***600***	ND	16.0	0.30	56.0	15,000	ND

TABLE 5
Dayco Corporation/L.E. Carpenter Superfund Site
Quarterly Groundwater Monitoring - MNA Analytical Data

Well ID	Sampling Event	Heterotrophic Plate Count	TSS	TDS	Nitrate Nitrogen	Ammonia Nitrogen	Phosphorus (total)	Sulfate[1]	Methane	Dissolved Lead
	UNITS	cfu/ml	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l
NEW JERSEY GROUNDWATER QUALITY STANDARDS CLASS IIA		NCS	NCS	500	NCS	NCS	NCS	250	NCS	.005[2]
Dilution for Methane 500, Ammonia 10, TDS 5, Nitrate 5	2Q10	210,000	5.0	***630***	ND	12.0	0.26	36	13,000	ND
Dilution for Methane 250, Ammonia 10, Nitrate 5	3Q10	>30,000	11.0	***920***	ND	15.0	0.25	41	3,900	ND
Dilution factor for Nitrate 5, Sulfate 24, Methane 200	4Q10	>30000	23.0	430	ND	2.0	0.10	***510***	970	ND
Dilution factor for Nitrate 5, Sulfate 5, Ammonia 10, Methane 200	1Q11	36,000	ND	***620***	ND	9.1	0.21	120	10,000	ND
MW-32s										
Dilution factor for Methane 10	2Q08	>5700	NS	***3400***	ND	2	14	8.6	4,800	ND
Dilution factor for Methane 10	3Q08	410	NS	***650***	ND	1.6	2.6	NS	2,900	ND
Dilution factor for Sulfate 20 and Methane 100	4Q08	> 5700	50	***818***	ND	1.6	0.11	200	5,400	ND
Dilution factor for Methane 200	1Q09	430	385	***637***	ND	0.69	ND	8.9	9,500	ND
Dilution factor for Sulfate 20 and Methane 100	2Q09	240	35.2	***612***	0.16	1.8	ND	122	6,900	ND
Dillution factor for Ammonia Nitrogen 3 and Methane 50	3Q09	290	113	***620***	ND	ND	ND	2.8 J	12,000	ND
Dillution factor for Methane 50	4Q09	5,200	208	***691***	ND	1.2	ND	47.9	7,300	ND
Dilution factor for Nitrate 5, TDS 2, Methane 400	1Q10	4,600	15	***540***	ND	0.53	0.13	4.7	13,000	ND
Dilution for Methane 200, TSS 2, TDS 20, Nitrate 5	2Q10	370	52	***520***	ND	0.085	0.14	11	11,000	ND
Dilution for Methane 200, Nitrate 5	3Q10	11,000	400	***850***	ND	0.40	0.17	12	5,100	ND
Dilution factor for Nitrate 5,Sulfate 100,Methane 200	4Q10	500,000	69	300	ND	0.54	0.29	460	2,100	ND
Dilution factor for Nitrate 5,Sulfate 5,Methane 200	1Q11	950	31	***710***	ND	0.35	0.17	120	8,700	ND
MW-33s										
Dilution factor for Methane 10	2Q08	>5700	220	310	ND	5	0.17	8	2,800	**0.011**
Dilution factor for Methane 10	3Q08	ND	250	380	ND	7	ND	10	2,000	ND
Dilution factor for Methane 100	4Q08	> 5700	51	358	ND	7.4	0.13	8.6	4,800	ND
Dilution factor for Methane 200	1Q09	160	122	395	ND	ND	ND	68.1	9,600	ND
Dilution factor for Methane 50	2Q09	2,800	74	410	ND	6.7	0.31	4.8 J	8,400	ND
Dilution factor for Ammonia Nitrogen 2 and Methane 25	3Q09	1,200	181	***610***	ND	5.8	0.42	12.9	5,100	ND
Dilution factor for Methane 20	4Q09	670	85	***518***	ND	5.8	ND	7.2	3,200	ND
Dilution factor for TDS 2, Nitrate, & Ammonia 5, Methane 200	1Q10	6,700	ND	420	ND	7.2	0.06	6.2	6,900	ND
Dilution for Methane 200, TSS 2, TDS 20, Nitrate 5	2Q10	6,000	74	460	ND	4.0	0.098	9.3	6,100	ND
Dilution for Methane 200, Nitrate 5	3Q10	66,000	22	***650***	ND	4.3	0.130	18	540	ND
Dilution for Nitrate and Sulfate 5, Methane 100	4Q10	34,000	34	***1400***	ND	4.0	0.190	110	270	ND
Dilution for Nitrate and Sulfate 5, Methane 50	1Q11	21,000	23	***750***	ND	1.8	0.080	120	2,200	ND
MW-34s										
Dilution factor for Methane 10	2Q08	>5700	NS	490	ND	ND	ND	12	3,700	ND
Dilution factor for Methane 10	3Q08	ND	NS	NS	NS	ND	0.34	NS	2,800	NS
Dilution factor for Methane 5	4Q08	2,100	ND	**693**	0.53	0.35 J	ND	23.9	490	ND
Dilution for Ammonia Nitrogen 5, Methane 200	1Q09	NM	NS	NS	ND	ND	ND	NS	7,200	ND
Dilution factor for Methane 100	2Q09	NA	26.4	369	0.16	0.38 J	ND	8.7	8,600	ND
Dilution factor for Methane 50	3Q09	150	56.4	NS	ND	ND	ND	4.9 J	9,600	ND
Dilution factor for Methane 20	4Q09	45	293	462	ND	ND	ND	9.8	4,400	ND
Dilution factor for Nitrate 5, TDS 2, Methane 400	1Q10	9,300	27	400	ND	0.13	ND	2.8	9,200	ND
Dilution for Methane 200, TSS 2, TDS 10, Nitrate 5	2Q10	1,700	20	370	ND	ND	ND	2.8	8,700	ND
Dilution for Methane 200	3Q10	>30,000	NS-dry	NS-dry	NS-dry	0.032	0.084	NS-dry	3,100	ND
Dilution factor for Nitrate 5, Sulfate 100	4Q10	8,700	24	180	0.23	0.14	ND	210	ND	ND
Dilution factor for Nitrate and Sulfate 5,Methane 10	1Q11	810	6	380	ND	0.13	ND	65	270	ND
MW-35s										
Dilution factor for Methane is 10	2Q08	>5700	2100	***570***	ND	1.8	ND	13	3,900	ND
Dilution factor for Methane is 10	3Q08	ND	85	***520***	ND	1.3	ND	ND	3,600	ND
Dilution factor for Methane 100	4Q08	> 5700	22.4 J	***568***	ND	2.9	0.16	20.6	12,000	ND
Dilution factor for Methane 200	1Q09	1,800	37.6	499	ND	0.8	.087 J	ND	20,000	ND
Dilution factor for Methane 200	2Q09	680	77.6	459	ND	1.1	0.19	9.4	20,000	ND
Dilution factor for Methane 100	3Q09	50	114.0	466	ND	1.4	0.25	ND	17,000	ND
Dilution factor for Methane 50	4Q09	1,100	26.8	***508***	ND	0.84	ND	17.1	8,400	ND
Dilution factor for Nitrate 5, TDS 2, Methane 1000	1Q10	680	ND	460	ND	0.24	0.08	0.9	17,000	ND
Dilution for Methane 400, TSS 2, TDS 20, Nitrate 5	2Q10	76	38	***540***	ND	0.081	0.079	ND	15,000	ND
Dilution for Methane 250, Nitrate 5	3Q10	170	35	***570***	ND	0.15	0.11	4.6	13,000	ND
Dilution factor for Nitrate and Sulfate 5,Methane 250	4Q10	5800	64	***720***	ND	0.78	0.09	24.0	4,200	ND
Dilution factor for Nitrate and Sulfate 5,Methane 200	1Q11	580	39	430	ND	0.11	0.10	2.7	9,200	ND
Atmospheric Blank	1Q05	> 5700	ND	ND	ND	ND	ND	ND	ND	NS
	4Q05	5	ND	10.0 J	ND	ND	ND	0.30 J	ND	NS
	1Q06	2	ND	ND	ND	ND	ND	ND	ND	NS
	2Q06	38	ND	ND	ND	ND	ND	1.5 J	ND	ND*
	3Q06	ND	ND	ND	ND	ND	ND	ND	ND	ND*
	4Q06	ND	ND	ND	ND	ND	ND	ND	ND	ND*
	1Q07	1	ND	ND	ND	ND	ND	ND	22	ND*
	2Q07	ND	ND	19	ND	ND	ND	ND	ND	ND*
	3Q07	ND	ND	ND	ND	ND	ND	ND	ND	ND*
	4Q07	ND	ND	ND	ND	0.16	ND	ND	ND	ND*
	1Q08	ND	ND	ND	ND	0.16	ND	ND	ND	ND*
	2Q08	ND	ND	ND	ND	ND	ND	ND	ND	**0.0051***
	3Q08	ND	ND	ND	ND	0.16	ND	ND	ND	ND*
	4Q08	ND	ND	ND	ND	ND	ND	ND	ND	ND*
	1Q09	ND	ND	ND	ND	ND	ND	ND	ND	ND*

TABLE 5
Dayco Corporation/L.E. Carpenter Superfund Site
Quarterly Groundwater Monitoring - MNA Analytical Data

Well ID	Sampling Event	Heterotrophic Plate Count	TSS	TDS	Nitrate Nitrogen	Ammonia Nitrogen	Phosphorus (total)	Sulfate(1)	Methane	Dissolved Lead
	UNITS	cfu/ml	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	mg/l
NEW JERSEY GROUNDWATER QUALITY STANDARDS CLASS IIA		NCS	NCS	500	NCS	NCS	NCS	250	NCS	.005(2)
	2Q09	ND	ND	ND	ND	ND	ND	ND	ND	ND*
	3Q09	ND	ND	ND	ND	ND	ND	ND	ND	ND*
	4Q09	ND	ND	ND	ND	ND	ND	ND	ND	ND*
	1Q10	ND	11	ND	0.35	ND	ND	ND	ND	ND*
Dilution factor for Nitrate, Lead, and TDS 5	2Q10	ND	ND	ND	ND	ND	ND	ND	ND	ND*
Dilution factor for Nitrate and Lead 5	3Q10	ND	ND	ND	ND	ND	ND	ND	ND	ND*
Dilution factor for Lead, Nitrate and Sulfate 5	4Q10	2.5	ND	15	ND	ND	ND	ND	ND	ND*
Dilution factor for Lead, Nitrate and Sulfate 5	1Q11	ND	ND	ND	ND	0.042	ND	ND	ND	ND*
Rinsate Blank	1Q05	36	ND	ND	ND	ND	ND	ND	ND	NS
	3Q05	ND	ND	ND	ND	ND	ND	ND	ND	NS
	4Q05	ND	ND	ND	ND	ND	ND	ND	ND	NS
	1Q06	ND	ND	ND	ND	ND	ND	ND	ND	NS
	2Q06	120	ND	ND	ND	ND	ND	ND	ND	ND*
	2Q06	250	ND	ND	ND	ND	ND	ND	ND	ND*
	3Q06	45	ND	ND	ND	ND	ND	ND	ND	ND*
	3Q06	84	ND	ND	ND	ND	ND	ND	ND	ND*
	4Q06	56	ND	ND	ND	ND	ND	ND	ND	ND*
	1Q07	ND	ND	ND	ND	ND	ND	ND	ND	ND*
	1Q07	ND	ND	ND	ND	ND	ND	ND	ND	ND*
	2Q07	1	ND	2.5	ND	ND	ND	ND	ND	ND*
	2Q07	2	ND	ND	ND	ND	ND	ND	ND	ND*
	3Q07	ND	ND	ND	ND	ND	ND	ND	ND	ND*
	3Q07	ND	ND	ND	ND	ND	ND	ND	ND	ND*
	4Q07	ND	ND	ND	ND	ND	ND	ND	ND	ND*
	4Q07	ND	ND	11	0.17	ND	ND	ND	ND	ND*
	1Q08	ND	ND	ND	ND	ND	ND	ND	ND	ND*
	1Q08	ND	ND	ND	ND	ND	0.15	ND	ND	ND*
	2Q08	ND	ND	ND	ND	ND	ND	ND	ND	ND*
	2Q08	ND	ND	ND	ND	ND	ND	ND	ND	ND*
	3Q08	ND	ND	ND	ND	ND	ND	ND	ND	ND*
	3Q08	ND	ND	ND	ND	ND	ND	ND	ND	ND*
RB-02	4Q08	ND	ND	ND	ND	ND	ND	ND	ND	ND*
RB-03	4Q08	ND	ND	ND	ND	ND	ND	ND	ND	ND*
RB-02	1Q09	ND	ND	ND	ND	ND	ND	ND	ND	ND*
RB-03	1Q09	26	ND	ND	ND	ND	ND	ND	ND	ND*
RB-01	2Q09	1	ND	ND	ND	ND	ND	ND	ND	ND*
RB-02	2Q09	ND	ND	ND	ND	ND	ND	ND	ND	ND*
RB-01	3Q09	32	ND	ND	ND	ND	ND	ND	ND	ND*
RB-02	3Q09	ND	ND	ND	ND	ND	ND	ND	ND	ND*
RB-02	4Q09	ND	ND	ND	ND	ND	ND	ND	ND	ND*
RB-02 Dilution for Nitrate 5, TSS 2	1Q10	1	24	ND	ND	ND	ND	0.66	ND	ND*
RB-02 Dilution for Nitrate 5, TDS 2	2Q10	ND	ND	ND	ND	ND	ND	ND	ND	ND*
RB-02 Dilution for Leaed & Nitrate 5	3Q10	1	ND	110	ND	ND	ND	ND	2.7	ND*
RB-02 Dilution factor for Lead, Nitrate, Sulfate 5	4Q10	ND	ND	120	ND	ND	ND	ND	ND	ND*
RB-03 Dilution factor for Lead, Nitrate and Sulfate 5	4Q10	ND	ND	220	ND	0.013	ND	ND	ND	ND*
RB-02 Dilution factor for Lead, Nitrate and Sulfate 5	1Q11	ND	ND	ND	ND	0.045	ND	ND	ND	ND*
RB-03 Dilution factor for Lead, Nitrate and Sulfate 6	1Q11	5.5	11	ND	ND	0.048	ND	ND	ND	ND*

Notes:

As mentioned in January 13, 2005 letter, only the MW-19 Hotspot wells will be sampled for MNA parameters due to the implementation of Source Reduction on the L.E. Carpenter property effective 1Q05.

Groundwater monitoring wells MW-19, MW-19-1, MW-19-2, MW-19-3, MW-19-4, MW-19-5, MW-19-6, MW-19-7, MW-19-10, MW-19-11, GEI-2S, and GEI-2I were abandoned in October 2009.

(1) Sulfate results reported through 4Q06, and starting again in 4Q08, have a dilution factor of 5, except for blank samples or unless otherwise noted.
Sulfate results reported from 1Q07 through 3Q08 have no dilution factor for sulfate unless noted otherwise.

(2) NJ CLASS IIA GWQC, NJ SWQC [FW2] and PQL are for Total Lead

(3) MW-19 area monitoring wells were abandoned in 4Q2009. Therefore, MW-19 area wells have not been sampled for MNA parameters since 1Q10.
MNA monitoring will continue following the installation of the USEPA approved post excavation monitoring well network.

Legend:

NCS: No Criteria Specified by NJDEP

NS = Not Sampled

FS= Samples frozen in transit to lab.

ND = Not Detected **1.2**

NA = Not Analyzed, due to lack of recharge water

Concentration exceeds NJGWQS

L Lower Grab Sample

U Upper Grab Sample

* Total Lead

TABLE 6
Dayco Corporation/L.E. Carpenter Superfund Site
Quarterly Groundwater Monitoring - MNA Field Data

Well ID	Event	DO (mg/L)	pH	ORP (mV)	Conductivity (uS/cm)	Turbidity (NTU)	Temperature (°C)	Ferrous Iron (ppm)	Alkalinity (ppm)	CO2 (mg/L)
MW-19	1Q04	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2Q04	10.97	7.23	24	890	2	13.94	NM	160	70
	3Q04	0.1	7.62	-10	1179	2	16.18	<10	200	95
	1Q05	0.2	7.67	100	590	5	11.82	9	241[1]	121
	2Q05^{L}	1	7.84	NM	734	10	8.6	0.3	30	<10
	2Q05^{U}	1	7.69	NM	760	10	8.46	0.4	29	<10
	3Q05	1	7.03	185	1920	9	15.86	>10	110	60
	4Q05	5.34	6.47	87	1005	4	15.01	>10	110	18
	1Q06	3.53	6.59	-50	978	13	8.72	>10	11	>100
	2Q06	4.92	7.66	-43	905	9	13.98	>10	225	60
	3Q06	0.34	7.08	-24	761	5	16.2	18	100	90
	4Q06	0.08	6.53	-76.7	579	7	15.36	>10	275	70
	1Q07	0.15	6.59	-90.3	444	5	10.38	20	250	35
	2Q07	0.05	6.69	-56	1640	2.5	13.7	>20	100	120
	3Q07	0.1	6.59	-94	1201	2	17.05	>20	200	80
	4Q07	0.2	6.36	5	865	5.1	12.54	>20	225	40
	1Q08	0.6	6.4	111.7	214.2	5	8.55	0.1	40	14
	2Q08	0.22	6.12	68.4	1,068	6.66	10.55	>10	125	130
	3Q08	0.16	6.42	-30	1,150	7	13.94	>20	140	50
MW-19R	4Q10	0.09	7.02	-28.2	1144	9.35	13.34	15	180	17
	1Q11	2.56	6.91	0.5	993	9.94	6.99	0.2	120	14
MW-19-5	1Q04	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2Q04	10.16	7.02	41	1550	4	12.89	NM	130	70
	3Q04	1	7.26	87	1740	19	16.3	2	150	60
	1Q05	1	7.94	226	269	9	10.59	0	126[1]	63
	2Q05^{L}	1	7.94	NM	2640	10	8	0	45	16
	2Q05^{U}	0.8	7.99	NM	2100	38	6.96	0	45	10.5
	3Q05	0.8	7.44	184	920	2	15.15	>10	100	35
	4Q05	1.84	6.27	217	216	10	15.15	0.1	30	11
	1Q06	3.35	6.35	249	512	3	8.17	0	12	>100
	2Q06	6.79	7.50	36	327	5	14.4	0.3	90	27
	3Q06	2.87	7.45	143	406	10	16.38	0	100	22
	4Q06	6.3	7.55	184	347	6	14.49	0.4	145	32
	1Q07	0.16	6.53	14.2	370	4	10.08	1	175	16
	2Q07	0	7.04	-36	539	6.8	14	>20	190	70
	3Q07	0.1	7.09	36	530	5	16.18	1	160	65
	4Q07	1.6	6.17	45	311	3.6	12.59	0.4	130	30
	1Q08	1.83	6.28	108.1	125.5	12	6.14	0.1	35	15
	2Q08	1.48	5.99	6	371	10	10.06	0.2	100	40
	3Q08	0.07	6.76	-23	896	2	14.55	>20	190	30
	4Q08	3.29	6.38	76	214	7	15.01	0.2	75	26
	1Q09	3.35	7.27	16	227	7.89	8.64	0.2	60	14
	2Q09	4.67	6.19	-86	383	9	8.52	0.6	70	19
	3Q09	1.1	6.83	137	664	3	14.16	1	70	35
MW-19-5R	4Q10	0.1	6.84	-98	976	9.7	14.06	>20	250	17
	1Q11	0.16	6.66	55.1	1018	4.59	8.83	15	180	30
MW-19-6	1Q04	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2Q04	5.48	6.86	56	2640	10	15.24	NM	80	33
	3Q04	1	7.43	83	2490	4	16.61	0.4	125	20
	1Q05	1	7.73	241	867	12	11.79	0	204[1]	41
	2Q05^{L}	1	7.50	NM	1870	27	10.64	0.1	75	15
	2Q05^{U}	1	7.48	NM	1790	2	9.89	1	80	20
	3Q05	1	7.28	191	3030	36	15.2	0.4	70	20
	4Q05	5.39	5.86	307	1550	9	14.76	0	80	10.5
	1Q06	3.71	6.60	237	1116	4	9.93	0	12	>100
	2Q06	6.61	7.53	35	1520	5	13.51	0.2	125	23
	3Q06	4.48	7.44	162	1249	9	16.11	0	100	24
	4Q06	4.7	7.47	207	941	8	15.45	0	70	40
	1Q07	1.16	6.82	69.5	602	8	11.38	0.2	90	16
	2Q07	1	6.69	-35	2720	5.6	14.36	0.1	140	50
	3Q07	0.8	7.16	12	1458	4	17.3	0.6	160	42
	4Q07	2	7.44	51.4	1283	5.9	12.92	0.3	25	17
	1Q08	1	6.52	91.2	854.4	6	10.71	0.4	100	20
	2Q08	3.69	6.71	119.4	1,205	2.4	11.83	0.6	110	35
	3Q08	1.3	6.78	39	2,280	8	15.51	3	140	28
	4Q08	2.23	6.8	62	1,550	9	15.15	0.3	155	19
	1Q09	2.5	7.51	48	1152	8.69	10.10	0.4	120	20
	2Q09	2.69	6.46	-39	258	8.65	9.88	0.6	70	25
	3Q09	2.1	7.12	38	1730	9	14.02	1	60	25
MW-19-6R	4Q10	1.5	6.99	19.8	768	8.83	14.06	1	130	11

TABLE 6
Dayco Corporation/L.E. Carpenter Superfund Site
Quarterly Groundwater Monitoring - MNA Field Data

Well ID	Event	DO (mg/L)	pH	ORP (mV)	Conductivity (uS/cm)	Turbidity (NTU)	Temperature (^oC)	Ferrous Iron (ppm)	Alkalinity (ppm)	CO2 (mg/L)
	1Q11	0.22	6.72	-32	2000	7.85	9.63	2	160	20
MW-19-7	1Q04	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2Q04	5.89	6.82	48	380	6	14.34	NM	95	90
	3Q04	1	6.92	113	4040	2	16.77	1	75	70
	1Q05	0.6	7.16	281	1388	1	11.34	3	200(1)	63
	2Q05^L	0.05	7.82	102	938	25	11.7	15	160	36
	2Q05^U	1	7.80	NM	961	49	11.22	15	200	29
	3Q05^L	0.8	7.03	90	2670	17	14.76	>10	95	0.8
	3Q05^U	1	7.02	185	2460	5	16.02	>10	70	35
	4Q05	1.58	5.98	-44	1434	14	14.85	>10	11	30
	1Q06	1.86	6.20	43	1130	14	10.81	>10	>100	>100
	2Q06	3.87	7.41	-33	1284	9	13.28	>10	170	70
	3Q06	0.6	7.28	33	1254	10	15.8	9	200	50
	4Q06	0.44	7.47	204	970	7	15.23	2	185	70
	1Q07	0.12	6.80	-84.3	518	6	11.52	9	175	23
	2Q07	0	6.98	36	1397	4.5	15.68	2	100	38
	3Q07	0.2	7.05	181	1016	5	17.48	0.2	120	38
	4Q07	0.6	6.48	74.2	2126	5.3	12.7	0.2	70	30
	1Q08	1	6.21	105.4	2023	10	9.48	0.3	45	27
	2Q08	0.24	6.42	0.5	1,892	9.13	11.31	1.5	130	22.5
	3Q08	0.11	6.94	60	980	29	16.78	0.5	150	27
	4Q08	0.23	6.42	50.9	806	9.13	15.77	0.6	130	14
	1Q09	1.33	7.28	53	4350	3.2	9.70	1	120	20
	2Q09	4.24	6.58	-14	5120	28.1	9.00	2	40	18
	3Q09	0.38	7.26	112	2310	8	15.04	0.6	80	21
MW-19-7R	4Q10	0.1	7.07	-28.2	747	9.46	15.01	5	130	11
	1Q11	0.22	6.83	12.5	1521	12	9.1	16	180	25
MW-19-8	1Q04	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2Q04	3.98	6.9	-24	2010	10	15.69	NM	125	30
	3Q04	0.4	7.52	48	1093	7	18.29	2	100	19
	1Q05	0.3	7.06	161	177	16	12.92	10	142(1)	28
	2Q05	0.8	7.92	NM	1510	47	10.82	6	70	19
	3Q05	0	7.07	147	1820	2	18.86	3	80	19
	4Q05	6.74	6.10	330	1460	5	17.19	3	85	20
	1Q11	3.36	6.87	80.1	2162	8.13	8.59	0	130	14
MW-19-9D	1Q04	NS	NS	NS	NS	NS	NS	**	**	**
	2Q04	3.03	7.11	-28	480	63	14.64	**	**	**
	3Q04	0.2	7.40	8	545	35	15.7	**	**	**
	1Q05	1.5	7.14	193	871	267	11.58	**	**	**
	2Q05	0.05	7.91	NM	471	70	12.12	**	**	**
	3Q05	0	7.35	189	552	2	16.4	**	**	**
	4Q05	0.94	5.78	-91	465	1	13.96	**	**	**
MW-19-10	1Q04	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2Q04	3.82	6.78	85	1050	7	13.94	NM	80	25
	3Q04	0.1	7.35	107	1498	11	15.56	1.5	65	20
	1Q05	0.15	7.25	285	1039	28	13.19	2	127(1)	20
	2Q05^L	0.8	7.47	NM	1209	52	12.18	0.4	70	13
	2Q05^U	1	7.48	NM	1282	41	11.18	1	75	13
	3Q05	1	7.62	212	1148	18	16.47	0.6	70	13
	4Q05	9.89	6.73	229	1167	39	15.00	1	60	10
MW-19-11	1Q05	1.5	7.01	215	740	8	10.3	0	205(1)	65
	2Q05^L	0.8	7.88	NM	1424	38	12.18	4	110	17
	2Q05^U	0.8	7.80	NM	1442	10	12.12	4	90	15
	3Q05	1	7.72	209	1155	77	16.63	1	80	12.5
	4Q05	2.5	6.51	271	1470	10	15.86	0.4	85	15
MW-19-12	2Q06	0.99	7.29	-33	1046	9	16.06	4	120	100
	3Q06	0.21	7.41	5	1460	18	17.9	4	12	17
	4Q06	0.23	7.60	191	1234	10	16.72	3.5	1000	17
	1Q07	0.18	6.91	-39.6	680	8	12.29	1.5	100	10
	2Q07	2	7.24	137	473	5	18.56	0	110	11
	3Q07	2	7.45	118	463	2	19.2	0	85	0
	4Q07	9	7.55	2.7	439	8.1	9.68	0	110	<10
	1Q08	2	6.72	78.4	197.2	2	7.59	0	40	<10
	2Q08	7.4	7.09	79	386	0.12	13.31	0	110	<10
	3Q08	4.29	7.23	51	369	6	19.58	0	70	12
	4Q08	4.63	6.72	91	500	2	13.64	0.1	110	12
	1Q09	6.47	7.91	72	568	0.5	7.47	0.1	120	<10

TABLE 6
Dayco Corporation/L.E. Carpenter Superfund Site
Quarterly Groundwater Monitoring - MNA Field Data

Well ID	Event	DO (mg/L)	pH	ORP (mV)	Conductivity (uS/cm)	Turbidity (NTU)	Temperature (^oC)	Ferrous Iron (ppm)	Alkalinity (ppm)	CO2 (mg/L)
	2Q09	9.6	7.59	18	621	7.18	9.29	0	70	6
	3Q09	4.98	7.11	123	464	1	17.23	0	70	13
	4Q09	5.7	7.86	164	507	3	13.16	0	100	15
	1Q10	7.27	7.86	352	207	1	6.65	0	100	20
	2Q10	5.20	7.53	42.2	377	9.30	12.22	NM	NM	NM
	3Q10	5.17	6.81	151	423	8.00	18.90	NM	NM	NM
	4Q10	4.46	7.33	-65.2	324	2.89	10.83	0	110	<10
	1Q11	5.30	7.3	47.2	293	5.34	8.30	0	100	10
MW-19-13	4Q10	0.11	6.96	-36.7	704	44.70	14.74	>20	160	18
	1Q11	1.44	6.31	45	734	190.00	9.21	10	40	45
MW-19-14	4Q10	0.14	6.79	-5.5	1054	3.83	12.37	4	200	18
	1Q11	3.41	6.92	33.4	944	8.03	7.37	0.2	190	15
MW-19-15	4Q10	1.10	6.94	57.8	647	47.00	14.45	0.2	160	13
	1Q11	3.73	6.58	92.5	1606	15.20	8.64	0.2	150	11
MW-19-16	4Q10	2.68	7.37	44.6	1163	8.81	11.96	0.2	160	11
	1Q11	0.21	6.75	84.7	914	9.15	6.56	0.3	150	11
MW-19-17	4Q10	0.11	7.16	5.5	506	9.46	14.60	7	120	<10
	1Q11	0.17	6.59	-2.2	1332	9.19	10.47	13	110	27
MW-8	3Q08	0.06	7.04	-162	571	20	15.63	>20	260	30
	4Q08	0.23	6.99	-51	175	70	12.91	14	40	<100
	1Q09	0.1	8.08	-198	607	52.3	9.19	>10	125	30
	2Q09	0.1	7.16	12.3	268	39	8.11	>20	160	60
	3Q09	0.07	7.14	-165.1	633	13	13.34	>20	150	30
	4Q09	0.07	8.53	-177	442	28	13.01	>20	100	25
	1Q10	0.04	7.51	-193	417	48.9	8.53	>20	160	16
	2Q10	0.04	7.06	-126.5	440	24.2	10.58	>20	120	13
	3Q10	0.09	7.22	-196	573	24.5	15.50	>20	200	35
	4Q10	0.79	7.53	-153	370	26.2	11.23	20	50	18
	1Q11	0.18	7.02	-139	864	36.2	8.71	20	100	20
MW-25R	2Q06	0.47	6.77	-102	620	9	14.74	3.5	75	17
	3Q06	0.97	5.57	90.1	572	229	15.67	5	160	350
	4Q06	0.25	7.14	-41.2	517	24	11.33	1.5	90	100
	1Q07	1.8	6.80	-100.4	636	55	7.15	3	100	150
	2Q07	0.35	6.69	-65.8	453	123	14.38	3.5	40	20
	3Q07	1	6.98	-75.3	355	NM-mtr broke	18.93	0.3	75	15
	4Q07	0.6	7.15	30	616	127	6.81	2	100	110
	1Q08	0.34	7.32	-79	639	47.6	7.87	4.5	150	12.5
	2Q08	0.21	7.20	-80	601	46	10.95	4.5	150	15
	3Q08	0.24	6.55	-110.7	446	19.2	15.71	2.5	160	70
	4Q08	1.66	7.25	22.7	227	5.9	9.6	1	70	<10
	1Q09	0.71	7.22	21.8	383	8	5.00	0.5	120	<10
	2Q09	0.58	7.11	-40	376	8	6.48	2	70	7
	3Q09	0.15	6.77	-64	604	19.3	15.93	3	150	20
	4Q09	0.82	8.11	-44	726	121	10.94	2	70	20
	1Q10	3.1	7.08	-46	455	45.4	3.32	2	90	25
	2Q10	1.29	6.98	-56.2	515	117	11.04	2	50	11
	3Q10	1.62	7.00	-48	666	32.5	17.07	NS	NS	NS
	4Q10	0.75	7.15	-6	617	16	7.75	0.8	70	10
	1Q11	1.18	6.85	-36	668	9.6	6.72	1	100	<10

TABLE 6
Dayco Corporation/L.E. Carpenter Superfund Site
Quarterly Groundwater Monitoring - MNA Field Data

Well ID	Event	DO (mg/L)	pH	ORP (mV)	Conductivity (uS/cm)	Turbidity (NTU)	Temperature (°C)	Ferrous Iron (ppm)	Alkalinity (ppm)	CO2 (mg/L)
MW-27s	2Q06*	1.66	7.74	183	933	>1000	16.65	0	80	<10
	3Q06	0.54	7.72	45	1437	247	19.44	0	200	14
	4Q06	2.36	7.59	134	1275	>1000	16.39	0	<10	20
	1Q07	4	7.15	-10.8	1078	>1000	8.31	NM - sediment	NM - sediment	NM - sediment
	2Q07	8.29	7.09	105.6	765	>1000	15.23	NM - sediment	NM - sediment	NM - sediment
	3Q07	0.4	7.24	27	1017	>1000	17.58	NM - sediment	NM - sediment	NM - sediment
	4Q07	1	7.16	165	1002	997	11.34	NM - sediment	NM - sediment	NM - sediment
	1Q08	1	7.15	71.5	612.7	186	8.41	NM - sediment	NM - sediment	NM - sediment
	2Q08	1	7.18	111.1	735	81.1	11.43	0	22.5	85
	3Q08	3.21	6.21	46	861	184	17.09	0.8	225	135
	4Q08	2.63	6.99	34.4	626	47.2	13.67	NM - ran dry	NM - ran dry	NM - ran dry
	1Q09	1.12	7.35	51.3	522	1000	10.67	0.1	200	20
	2Q09	1.55	8.2	-71	486	62	9.08	0.6	150	15
	3Q09	0.61	7.59	15	675	24.8	15.29	1	250	20
	4Q09	5.12	8.31	-5	1180	108	15.93	NM	NM	NM
	1Q10	3.04	7.82	-84.5	705	107	9.37	0.3	200	20
	2Q10	0.89	7.41	-29.6	669	92	10.28	0.4	70	12
	3Q10	0.54	6.81	-43	1147	>1000	15.98	0.5	70	20
	4Q10	2.8	7.44	-40	1091	349	13.53	NM-ran dry	NM-ran dry	NM-ran dry
	1Q11	2.21	6.82	57.5	568	NM	8.52	0.1	150	18
MW-28s	2Q06	0.11	7.69	-478	687	12	14.38	>10	82	37
	3Q06	0.27	5.96	-101.8	831	14	17.69	>20	180	90
	4Q06	0.04	7.22	-146.8	684	20	15.27	>20	200	55
	1Q07	2.1	6.74	-176.2	650	12	9.75	>20	160	22
	2Q07	0.48	7.01	-138.3	568	36	15.36	>20	180	35
	3Q07	0.1	7.1	-132.1	576	9.6	16.99	>20	180	50
	4Q07	0.2	6.86	-120.4	634	7.03	11.97	>20	170	22
	1Q08	0.11	7.3	-169	492	11.3	9.22	15	130	20
	2Q08	0.19	6.57	-52.4	508	9.13	12.25	>10	140	35
	3Q08	0.29	6.91	-65.1	390	9.54	15.33	>20	200	35
	3Q08	1	6.8	-92	494	339	16.5	NM	NM	NM
	4Q08	0.05	6.94	-81.5	395	7.96	13.88	>20	170	<100
	1Q09	0.18	7.59	-15.3	466	9.86	9.63	>20	115	22
	2Q09	0.06	6.75	-76.6	392	9	9.26	>20	150	40
	3Q09	0.06	6.93	-114.2	899	9.66	14.81	>20	160	40
	4Q09	0.4	8.52	-143	830	6	13.25	>20	70	20
	1Q10	0.09	7.00	-132.9	502	9.6	8.71	20	35	16
	2Q10	0.06	6.99	-109.4	324	9.6	11.41	14	100	13
	3Q10	0.07	7.18	-153	658	9	15.50	>20	100	18
	4Q10	1.26	7.21	-149	821	9.1	12.43	20	100	25
	1Q11	0.11	6.94	-136	778	9.8	9.26	>20	70	30
MW-28i	2Q06	0.23	7.88	-126	756	8	15	>10	135	28
	3Q06	0.51	7.59	-98	649	14	16.42	18	90	27
	4Q06	0.04	7.37	-146.7	598	13	14.82	>20	150	25
	1Q07	0.2	6.80	-173.3	686	4.9	10.7	>20	140	23
	2Q07	0.18	7.07	-170	507	17	14.9	>20	145	24
	3Q07	0.1	7.15	-104.7	536	5.7	16.19	>20	170	30
	4Q07	0.26	6.59	-58.2	677	7.44	11.96	>20	160	20
	1Q08	0.01	6.81	-100.2	400.2	6	10.31	12	135	20
	2Q08	0.2	6.65	-4.8	593	7.75	12.99	>10	170	35
	3Q08	0.21	7.34	-136	530	10	14.94	>20	170	23
	4Q08	0.04	7.28	-68	442	8.81	14.23	>20	160	<100
	1Q09	0.13	7.07	-34	548	7.67	11.19	>20	150	25
	2Q09	0.05	6.35	-29.1	407	20	9.97	>20	100	60
	3Q09	0.52	7.88	-96	1007	4	13.70	20	50	50
	4Q09	0.13	8.43	-146	828	26	13.21	20	70	18
	1Q10	0.08	7.07	145.2	664	7.87	10.00	16	30	15
	2Q10	0.06	7.02	-112.1	372	9.8	12.06	12	70	14
	3Q10	0.08	7.25	-149	681	9.5	14.38	16	100	20
	4Q10	1.53	7.23	-151	849	7.38	12.79	>20	130	25
	1Q11	0.18	6.96	-134	793	9.17	10.53	>20	140	16

TABLE 6
Dayco Corporation/L.E. Carpenter Superfund Site
Quarterly Groundwater Monitoring - MNA Field Data

Well ID	Event	DO (mg/L)	pH	ORP (mV)	Conductivity (uS/cm)	Turbidity (NTU)	Temperature (°C)	Ferrous Iron (ppm)	Alkalinity (ppm)	CO2 (mg/L)
MW-29s	2Q06	3.63	7.32	-32	1021	68	18.45	>10	260	95
	3Q06	0.36	6.73	-109.8	1090	10	20.63	18	310	80
	4Q06	0.05	6.85	-97.9	775	11	17.04	>10	350	65
	1Q07	0.7	6.53	-163.9	902	5.6	8.77	18	240	30
	2Q07	4.03	6.71	-113.8	766	31	18.48	>10	225	25
	3Q07	0.7	6.66	-13.9	881	9.84	21.12	>20	325	100
	4Q07	0.2	7.12	-35	960	8	13.51	>20	285	75
	1Q08	0.21	7.02	-94	1027	9.92	7.87	>10	290	22
	2Q08	0.27	6.89	31.2	935	5.9	12.22	>20	250	70
	3Q08	0.08	6.61	-79.7	456	8.09	20.04	>10	300	130
	4Q08	0.09	6.91	-127	798	6	17.6	>20	250	36
	1Q09	1.14	6.72	62.8	564	6.78	9.00	20	200	50
	2Q09	0.05	7.09	-89.7	578	8	9.13	>20	350	70
	3Q09	0.07	6.47	-115.1	922	9.51	17.91	>20	250	80
	4Q09	0.21	7.85	-99	837	4	16.00	>20	220	90
	1Q10	0.1	7.08	-74	596	7.3	7.50	NM	70	35
	2Q10	0.11	6.70	-98.5	728	8.33	10.64	>20	100	50
	3Q10	0.12	6.69	-156	1008	9.8	18.57	>20	100	35
	4Q10	0.12	7.15	-129	935	3.1	12.40	10	100	25
	1Q11	0.36	6.65	-94	912	8.8	5.45	10	50	25
MW-30s	2Q06	0.14	6.76	-180	672	34	16.81	>10	78	14
	3Q06	0.39	5.66	73.1	704	155	18.9	18	60	250
	4Q06	0.01	7.09	-146.1	627	94	13.46	>20	200	60
	1Q07	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen
	2Q07	0.34	6.99	-159.4	458	213	18.55	>20	225	40
	3Q07	0.3	7.05	-128.7	696	100	19.15	>20	230	37
	4Q07	0.8	7.45	-50	871	67	7.74	>20	200	43
	1Q08	0.12	7.32	-158	825	113	4.85	>20	NM - sediment	NM - sediment
	2Q08	0.2	7.49	-47.6	484	9.42	11.43	18	160	22.5
	3Q08	0.03	6.93	-128.1	378	11.2	19.06	>10	200	70
	4Q08	0.05	6.66	-2.3	468	9.65	12.93	>20	50	20
	1Q09	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen
	2Q09	0.17	6.94	-238	956	9.47	7.67	+20	80	40
	3Q09	0.06	6.93	-118.2	724	9.5	18.26	>20	225	50
	4Q09	0.14	8.57	-151	906	9	12.18	>20	70	25
	1Q10	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen
	2Q10	1.45	6.92	-91.1	633	18	10.23	>20	100	30
	3Q10	0.1	7.00	-149	866	24.9	17.85	>20	100	25
	4Q10	0.85	7.19	-140	854	8.35	8.89	12	70	20
	1Q11	0.08	7.17	-81.3	599	9.71	7.8	13	180	30
MW-30i	2Q06	0.33	7.70	-194	687	8	15.22	5.5	75	19
	3Q06	0.43	7.52	-63	777	9	17.13	18	180	32
	4Q06	0.2	7.16	-144.2	827	42	14.2	>10	>1000	45
	1Q07	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen
	2Q07	0.33	6.99	-146.8	486	41	15.23	>20	145	25
	3Q07	0.4	7.08	-19.8	661	NM-mtr broke	17.07	>20	200	29
	4Q07	1	7.39	-15	889	136	8.28	>20	200	24
	1Q08	0.13	6.7	-149	784	9.98	8.55	>20	150	18
	2Q08	0.08	7.29	-142	581	21	12.28	16	140	26
	3Q08	0.04	73.11	-136.0	552	8.56	16.62	>10	180	50
	4Q08	0.3	7.43	-133	715	6	13.57	>20	165	27
	1Q09	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen
	2Q09	0.32	6.73	-222	930	5.7	8.75	20	50	32
	3Q09	0.05	7.06	-143.2	682	9.62	15.86	18	180	50
	4Q09	0.1	8.46	-148	878	20	12.95	14	100	18
	1Q10	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen
	2Q10	0.07	7.06	-120.9	605	7.31	9.61	14	70	22
	3Q10	0.33	7.1	-160	806	21	15.55	16	70	20
	4Q10	1.08	7.49	-140	893	9.8	10.82	14	70	16
	1Q11	0.1	7.19	-12	620	7.88	9.18	15	140	25

TABLE 6
Dayco Corporation/L.E. Carpenter Superfund Site
Quarterly Groundwater Monitoring - MNA Field Data

Well ID	Event	DO (mg/L)	pH	ORP (mV)	Conductivity (uS/cm)	Turbidity (NTU)	Temperature (^oC)	Ferrous Iron (ppm)	Alkalinity (ppm)	CO2 (mg/L)
MW-30d	2Q06	0.3	5.35	-131	449	10	14.45	2	100	30
	3Q06	2.49	7	-44	458	15	15.07	2.5	70	70
	4Q06	0.18	7.29	-99	637	33	13.39	5	130	17
	1Q07	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen
	2Q07	0.38	7.03	-95.7	340	69	14.51	3.5	115	12
	3Q07	0.8	7.24	22.6	401	NM-mtr broke	14.73	3	130	13
	4Q07	0.1	7.05	128	500	80	10.02	0.4	100	<10
	1Q08	0.45	6.8	1	487	16.3	9.19	1.5	130	<10
	2Q08	0.32	7.24	-62	504	18	12.87	2	125	14
	3Q08	0.2	7.3	-112.3	328	9.41	15.26	2.5	115	14
	4Q08	0.19	7.48	-114	532	12	12.59	6	125	13
	1Q09	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen	NS-frozen
	2Q09	0.18	7.03	-197	608	14	10.87	3	80	13
	3Q09	0.22	7.19	-110	450	14.5	13.79	2	130	13
	4Q09	0.18	8.68	-119	635	9	12.61	2	50	11
	1Q10	0.2	7.25	-87	508	9.2	10.25	2	150	11
	2Q10	0.24	7.17	-56.3	377	23.2	10.87	2	40	10
	3Q10	7.8	7.41	-65	492	51	13.2	1	40	20
	4Q10	6.18	7.69	-89	758	7.27	12.2	3	50	12
	1Q11	0.25	5.48	108	584	8.71	11.9	2	100	50
MW-31s	2Q08	0.51	12.47	-192	1,499	>1000	15.74	1	225	0
	3Q08	0.97	6.54	-27	2,130	381	21.79	4.5	1000	400
	4Q08	0.16	8.13	34.7	488	7.64	12.99	NM-No Water	NM-No Water	NM-No Water
	1Q09	0.43	10.98	71	567	15	5.45	0.1	200	0
	2Q09	0.16	8.68	-127.6	540	28	6.61	0.4	225	18
	3Q09	0.24	10.67	-144.1	795	6.22	18.68	0.5	170	NM-No Water
	4Q09	0.54	9.03	-72	1019	37	13.41	>20	100	NM-No Water
	1Q10	2.26	11.57	-148	670	79.4	4.42	0	140	0
	2Q10	1.65	11.26	-116.6	905	3.98	10.38	0	200	0
	3Q10	0.38	8.86	-272	900	>1000	18.80	NM-No Water	NM-No Water	NM-No Water
	4Q10	0.65	7.46	13.7	959	3.91	9.10	6	125	16
	1Q11	0.37	9.48	32	497	2.77	5.37	7	90	0
MW-32s	2Q08	0.33	6.9	-86	1,105	109	12.11	NM-No Water	NM-No Water	NM-No Water
	3Q08	0.07	6.47	-149.6	1,169	15.9	22.56	NM-No Water	NM-No Water	NM-No Water
	4Q08	0.41	6.68	-20.4	799	14	14.72	NM-No Water	NM-No Water	NM-No Water
	1Q09	0.32	6.94	42.1	665	8	5.60	NM-No Water	NM-No Water	NM-No Water
	2Q09	0.29	6.61	-132.8	659	12	6.62	>20	250	80
	3Q09	0.19	6.63	-111.4	952	5.17	18.70	>20	500	100
	4Q09	0.3	7.77	-53	1276	169	13.04	NM-No Water	NM-No Water	NM-No Water
	1Q10	0.45	6.68	-82	687	10.3	3.89	>20	200	30
	2Q10	0.27	6.64	-106.0	825	5.38	10.50	>20	200	30
	3Q10	0.56	6.37	-134.0	974	221	19.23	NM-No Water	NM-No Water	NM-No Water
	4Q10	0.32	6.99	-85.7	837	17.7	8.63	>20	225	35
	1Q11	0.45	6.92	8.6	734	8.4	5.30	>20	250	35
MW-33s	2Q08	0.77	7.29	-74	650	682	12.98	18	180	70
	3Q08	2.55	6.06	NM	616	148	26.4	>20	310	200
	4Q08	0.21	6.44	5.7	607	14	13.1	NM-No Water	NM-No Water	NM-No Water
	1Q09	0.37	5.2	168.5	567	38	5.29	>20	225	60
	2Q09	0.61	6.79	-39.4	577	38.6	5.86	>20	350	80
	3Q09	0.18	6.56	-82.7	1226	16.9	17.63	>20	500	150
	4Q09	2.96	7.79	-46	1381	314	14.13	>20	400	35
	1Q10	0.93	6.79	-96.7	776	52.3	4.20	>20	300	25
	2Q10	3.19	6.69	-82.1	1055	32.9	9.50	>20	300	50
	3Q10	0.16	6.36	-80	910	30.9	18.66	NM-No Water	NM-No Water	NM-No Water
	4Q10	0.95	7.01	86.5	735	33.6	9.29	10	250	30
	1Q11	1.01	7.04	13.8	609	28.1	5.28	9	225	35
MW-34s	2Q08	0.51	7.01	-111	794	7	14.84	NM-No Water	NM-No Water	NM-No Water
	3Q08	0.15	6.4	-136.3	1240	12.1	20.19	NM-No Water	NM-No Water	NM-No Water
	4Q08	0.48	6.62	50.7	686	13.5	14.83	NM-No Water	NM-No Water	NM-No Water
	1Q09	0.27	7.33	23.9	557	9	5.90	NM-No Water	NM-No Water	NM-No Water
	2Q09	0.44	7.32	-82.5	488	10	6.57	8	300	30
	3Q09	0.36	6.51	-89	761	6.08	17.40	NM-No Water	NM-No Water	NM-No Water
	4Q09	2.72	7.66	-30	966	31	13.15	NM-No Water	NM-No Water	NM-No Water
	1Q10	0.53	6.74	-58	500	13.1	4.31	20	70	20
	2Q10	0.39	6.58	-74.5	576	26.7	9.57	>20	250	35
	3Q10	1.00	6.16	-70	701	32.7	18.57	NM-No Water	NM-No Water	NM-No Water
	4Q10	0.42	6.87	-6.4	672	5.38	8.97	0.2	120	16
	1Q11	0.86	6.64	13.2	522	4.87	5.43	0.1	160	16

TABLE 6
Dayco Corporation/L.E. Carpenter Superfund Site
Quarterly Groundwater Monitoring - MNA Field Data

Well ID	Event	DO (mg/L)	pH	ORP (mV)	Conductivity (uS/cm)	Turbidity (NTU)	Temperature (^oC)	Ferrous Iron (ppm)	Alkalinity (ppm)	CO2 (mg/L)
MW-35s	2Q08	0.37	6.78	-56	917	>1000	11.51	>20	310	70
	3Q08	1.5	6.35	-55	736	65	19.23	>20	260	50
	4Q08	1.35	6.87	-30.2	848	38.5	14.18	NM-No Water	NM-No Water	NM-No Water
	1Q09	0.15	7.28	3.3	607	59	5.81	>20	225	30
	2Q09	0.21	7.36	-121.9	683	53	6.40	>20	300	30
	3Q09	0.2	6.65	-108.2	896	22.2	17.49	>20	275	80
	4Q09	3.69	8.14	-56	1109	29	13.15	>20	350	30
	1Q10	0.4	6.72	-72	556	141	4.09	>20	200	25
	2Q10	0.24	6.48	-59.5	710	46.5	10.45	>20	250	30
	3Q10	0.22	6.51	-93	1006	840	18.58	NM-No Water	NM-No Water	NM-No Water
	4Q10	0.37	6.85	-59.8	557	27.1	8.72	>20	200	22
	1Q11	0.73	6.71	15.3	542	11.4	5.71	>20	160	25

Notes:

As mentioned in January 13, 2005 letter, only the MW-19 Hotspot wells will be sampled for MNA parameters due to the implementation of Source Reduction on the L.E. Carpenter property effective 1Q05.

Groundwater monitoring wells MW-19, MW-19-1, MW-19-2, MW-19-3, MW-19-4, MW-19-5, MW-19-6, MW-19-7, MW-19-10, MW-19-11, GEI-2S, and GEI-2I were abandoned in October 2009.

** Additional field MNA parameters not required for MW-19-9D.

(1) Laboratory analyzed for alkalinity due to destroyed field kits.

NS = Not Sampled

NM = Not Measured

L Lower Grab Sample

U Upper Grab Sample

* Well was not stabalized due to well going dry.

Through 1st Quarter 2011

TABLE 7
Dayco Corporation/L.E. Carpenter Superfund Site
Surface Water Monitoring Data

MONITORING WELLS	ANALYTICAL PARAMETERS											
	SAMPLE DATE	QUARTER	Benzene		Ethylbenzene		Toluene		Total Xylenes		bis-2-Ethylhexylphthalate (DEHP)	
		UNITS	ug/l		ug/l		ug/l		ug/l		ug/l	
APPLICABLE BACKGROUND CONCENTRATION (SW-R-6). CONCENTRATION AT OR BELOW DECTION LIMIT. N.J.A.C. 7:9B-1.5 (d)6iii (4)			0.5		0.5		0.5		1.5		0.95	
SW-D-1												
*	8-Apr-05	2Q05	<	0.2	<	0.2	<	0.2	<	0.6	<	1.0
	26-Jul-05	3Q05	<	0.2	<	0.2	J	0.5	<	0.6	<	1.0
	26-Oct-05	4Q05	<	0.2	<	0.2	<	0.2	<	0.6	<	1.0
	27-Feb-06	1Q06	<	0.2	<	0.2	<	0.2	<	0.6	J	2.0
	19-Jun-06	2Q06	<	0.2	<	0.2	<	0.2	<	0.6	<	1.0
	11-Sep-06	3Q06	<	0.2	<	0.2	J	0.2	<	0.6	J	11.0
	9-Nov-06	4Q06	<	0.2	<	0.2	<	0.2	<	0.6	<	0.9
	7-Feb-07	1Q07	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
	25-Jun-07	2Q07	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
	10-Sep-07	3Q07	<	1.0	<	1.0	<	5.0	<	3.0		**7.3**
	4-Dec-07	4Q07	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
Dilution factor for DEHP 1.18	18-Feb-08	1Q08	<	1.0	<	1.0	<	5.0		**4.9**	<	1.2
Dilution factor for DEHP 1.03	5-May-08	2Q08	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
Dilution factor for DEHP 1.33	21-Jul-08	3Q08	<	1.0	<	1.0	<	5.0	<	3.0	<	1.3
	27-Oct-08	4Q08	<	0.2	<	0.2	<	0.2	<	0.6	<	0.9
	12-Jan-09	1Q09	<	0.9	<	0.8	<	0.8	<	0.9		**12**
	6-Apr-09	2Q09	<	0.9	<	0.8	<	0.8	<	0.9	J	2.0
	21-Jul-09	3Q09	<	0.9	<	0.8	<	0.8	<	0.9	J	1.0
	10-Nov-09	4Q09	<	0.9	<	0.8	<	0.8	<	0.9	J	1.0
	13-Feb-10	1Q10	<	0.5	<	0.5	<	0.5	<	1.5		**51**
	19-Apr-10	2Q10	<	0.5	<	0.50	<	0.5	<	1.5	<	0.95
	23-Aug-10	3Q10	<	0.5	<	0.5	<	0.5	<	1.5		**15**
	9-Sep-10	3Q10 (5)	<	0.5	<	0.5	<	0.5	<	1.5		NS
	7-Dec-10	4Q10	<	0.5	<	0.5	<	0.5	<	1.5		**1**
	14-Mar-11	1Q11	<	0.5	<	0.5	<	0.5	<	1.5	<	0.99
SW-D-2												
	8-Apr-05	2Q05		NS		NS		NS		NS		NS
	26-Jul-05	3Q05	<	0.2	J	0.5	<	0.2		**6.1**		**38**
	26-Oct-05	4Q05	<	0.2	J	0.6	<	0.2	J	2.0	<	1.0
	27-Feb-06	1Q06	<	0.2	J	0.8	<	0.2	J	2.7		**27**
	19-Jun-06	2Q06	<	0.2	<	0.2	<	0.2	<	0.6	J	1.0
	19-Jun-06	2Q06D	<	0.2	<	0.2	<	0.2	<	0.6	J	2.0
	11-Sep-06	3Q06	<	0.2	<	0.2	<	0.2	<	0.6	J	2.0
	9-Nov-06	4Q06	<	0.2	<	0.2	<	0.2	<	0.6	J	1.0
	7-Feb-07	1Q07	<	1.0	<	1.0	<	5.0	<	3.0		**11**
	25-Jun-07	2Q07	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
	10-Sep-07	3Q07	<	1.0	<	1.0	<	5.0	<	3.0		**3**
	4-Dec-07	4Q07	<	1.0	<	1.0	<	5.0	<	3.0		**1.5**
Dilution factor for DEHP 1.11	18-Feb-08	1Q08	<	1.0	<	1.0	<	5.0		**4.4**	<	1.1
Dilution factor for DEHP 1.18	5-May-08	2Q08	<	1.0	<	1.0	<	5.0	<	3.0	<	1.2
	21-Jul-08	3Q08	<	1.0	<	1.0	<	5.0	<	3.0		**7.1**
	27-Oct-08	4Q08	<	0.2	<	0.2	<	0.2	<	0.6		**13**
Dilution factor for DEHP 5	12-Jan-09	1Q09	<	0.9	<	0.8	<	0.8	<	0.9		**230**
	6-Apr-09	2Q09	<	0.9	<	0.8	<	0.8	<	0.9	J	1.0
	6-Apr-09	2Q09D	<	0.9	<	0.8	<	0.8	<	0.9	J	1.0
	21-Jul-09	3Q09	<	0.9	<	0.8	<	0.8	<	0.9	J	4.0

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MONITORING WELLS	ANALYTICAL PARAMETERS											
	SAMPLE DATE	QUARTER	Benzene		Ethylbenzene		Toluene		Total Xylenes		bis-2-Ethylhexylphthalate (DEHP)	
		UNITS	ug/l		ug/l		ug/l		ug/l		ug/l	
APPLICABLE BACKGROUND CONCENTRATION (SW-R-6). CONCENTRATION AT OR BELOW DECTION LIMIT. N.J.A.C. 7:9B-1.5 (d)6iii (4)			0.5		0.5		0.5		1.5		0.95	
	10-Nov-09	4Q09	<	0.9	<	0.8	<	0.8	<	0.9	J	2.0
	10-Nov-09	4Q09D	<	0.9	<	0.8	<	0.8	<	0.9	J	5.0
	13-Feb-10	1Q10	<	0.5	<	0.5	<	0.5	<	1.5		**18**
	19-Apr-10	2Q10	<	0.5		**0.75**	<	0.5		**1.6**	<	0.95
	19-Apr-10	2Q10D	<	0.5		**0.78**	<	0.5		**1.7**	<	0.95
	23-Aug-10	3Q10	<	0.5	<	0.5	<	0.5	<	1.5		**23**
	9-Sep-10	3Q10(5)	<	0.5	<	0.5	<	0.5	<	1.5		NS
	7-Dec-10	4Q10	<	0.5	<	0.5	<	0.5	<	1.5		**4**
	12-Jul-10	4Q10D	<	0.5	<	0.5	<	0.5	<	1.5		**5**
	14-Mar-11	1Q11	<	0.5	<	0.5	<	0.5	<	1.5		**1.8**
SW-D-3												
	8-Apr-05	2Q05	<	0.2		**21**	<	0.2		**79**	J	2.0
	26-Jul-05	3Q05	<	0.2	<	0.2	<	0.2	J	1.1	J	7.0
	26-Oct-05	4Q05	<	0.2	J	0.4	<	0.2	J	1.4	<	1.0
	27-Feb-06	1Q06	<	0.2		**1.1**	<	0.2		**3.9**	J	6.0
	19-Jun-06	2Q06	<	0.2	<	0.2	<	0.2	<	0.6	J	3.0
	11-Sep-06	3Q06	<	0.2	<	0.2	<	0.2	<	0.6	J	1.0
	11-Sep-06	3Q06D	<	0.2	<	0.2	<	0.2	<	0.6	J	3.0
	9-Nov-06	4Q06	<	0.2	<	0.2	<	0.2	<	0.6	<	1.0
	7-Feb-07	1Q07	<	1.0	<	1.0	<	5.0	<	3.0		**3.3**
	25-Jun-07	2Q07	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
	10-Sep-07	3Q07	<	1.0	<	1.0	<	5.0	<	3.0		**1.6**
Dilution factor for DEHP 1.1	4-Dec-07	4Q07	<	1.0	<	1.0	<	5.0	<	3.0	<	1.1
Dilution factor for DEHP 1.05	18-Feb-08	1Q08	<	1.0	<	1.0	<	5.0		**3.8**	<	1.0
	18-Feb-08	1Q08D	<	1.0	<	1.0	<	5.0		**3.8**	<	1.0
Dilution factor for DEHP 1.25	5-May-08	2Q08	<	1.0	<	1.0	<	5.0	<	3.0	<	1.2
	21-Jul-08	3Q08	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
	27-Oct-08	4Q08	<	0.2	<	0.2	<	0.2	<	0.6	<	0.9
	12-Jan-09	1Q09	<	0.9	<	0.8	<	0.8	<	0.9		**14**
	6-Apr-09	2Q09	<	0.9	<	0.8	<	0.8	<	0.9	<	1.0
	21-Jul-09	3Q09	<	0.9	<	0.8	<	0.8	<	0.9	J	1.0
	10-Nov-09	4Q09	<	0.9	<	0.8	<	0.8	<	0.9	<	1.0
	13-Feb-10	1Q10	<	0.5	<	0.5	<	0.5	<	1.5		**3**
	19-Apr-10	2Q10	<	0.5	<	0.5	<	0.5	<	1.5	<	0.95
	23-Aug-10	3Q10	<	0.5	<	0.5	<	0.5	<	1.5		**2.3**
	9-Sep-10	3Q10(5)	<	0.5	<	0.5	<	0.5	<	1.5		NS
	7-Dec-10	4Q10	<	0.5	<	0.5	<	0.5	<	1.5		**1.3**
	14-Mar-11	1Q11	<	0.5	<	0.5	<	0.5	<	1.5	<	0.95
SW-D-4												
	20-Jun-06	2Q06	<	0.2	<	0.2	J	0.4	<	0.6	J	3.0
	11-Sep-06	3Q06	<	0.2	<	0.2	<	0.2	<	0.6	J	2.0
	9-Nov-06	4Q06	<	0.2	J	0.4	<	0.2	J	0.6	<	0.9
	7-Feb-07	1Q07	<	1.0		**2**	<	5.0		**3.8**		**3.3**
	25-Jun-07	2Q07	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
	10-Sep-07	3Q07	<	1.0	<	1.0	<	5.0	<	3.0		**1**

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MONITORING WELLS	SAMPLE DATE	QUARTER	Benzene		Ethylbenzene		Toluene		Total Xylenes		bis-2-Ethylhexylphthalate (DEHP)	
		UNITS	ug/l		ug/l		ug/l		ug/l		ug/l	
APPLICABLE BACKGROUND CONCENTRATION (SW-R-6). CONCENTRATION AT OR BELOW DECTION LIMIT. N.J.A.C. 7:9B-1.5 (d)6iii [4]			0.5		0.5		0.5		1.5		0.95	
	4-Dec-07	4Q07	<	1.0		**1.4**	<	5.0	<	3.0	<	1.0
Dilution factor for DEHP 1.08	18-Feb-08	1Q08	<	1.0	<	1.0	<	5.0		**4.1**	<	1.1
Dilution factor for DEHP 1.08	5-May-08	2Q08	<	1.0	<	1.0	<	5.0	<	3.0	<	1.1
	21-Jul-08	3Q08	<	1.0	<	1.0	<	5.0	<	3.0		**9.2**
	27-Oct-08	4Q08	<	0.2	<	0.2	<	0.2	<	0.6	<	0.9
	12-Jan-09	1Q09	<	0.9		**21**	<	0.8		**20**		**29**
	6-Apr-09	2Q09	<	0.9	<	0.8	<	0.8	<	0.9	J	2.0
	20-Jul-09	3Q09	<	0.9	<	0.8	<	0.8	<	0.9	J	2.0
	20-Jul-09	3Q09D	<	0.9	<	0.8	<	0.8	<	0.9	J	2.0
	10-Nov-09	4Q09	<	0.9	<	0.8	<	0.8	<	0.9	J	1.0
Dilution factor for DEHP 2	13-Feb-10	1Q10	<	0.5		**0.96**	<	0.5	<	1.5		**150**
	13-Feb-10	1Q10D	<	0.5		**0.91**	<	0.5	<	1.5		**43**
	19-Apr-10	2Q10	<	0.5		**15**	<	0.5		**48**	<	0.95
	23-Aug-10	3Q10	<	0.5	<	0.5	<	0.5	<	1.5		**24**
	23-Aug-10	3Q10D	<	0.5	<	0.5	<	0.5	<	1.5		**17**
	9-Sep-10	3Q10[5]	<	0.5	<	0.5	<	0.5	<	1.5		NS
	9-Sep-10	3Q10D[5]	<	0.5	<	0.5	<	0.5	<	1.5		NS
	6-Dec-10	4Q10	<	0.5	<	0.5	<	0.5	<	1.5		**2**
	14-Mar-11	1Q11	<	0.5		**2**	<	0.5		**4.4**	<	0.98
	14-Mar-11	1Q11D	<	0.5		**2.1**	<	0.5		**4.6**	<	0.95
SW-D-5												
	11-Sep-06	3Q06	<	0.2	<	0.2	<	0.2	<	0.6	J	10
	6-Nov-06	4Q06	<	0.2	J	0.2	<	0.2	J	0.8	<	0.9
	7-Feb-07	1Q07	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
	25-Jun-07	2Q07	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
	10-Sep-07	3Q07	<	1.0	<	1.0	<	5.0	<	3.0		**3.4**
	3-Dec-07	4Q07	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
Dilution factor for DEHP 1.1	3-Dec-07	4Q07D	<	1.0	<	1.0	<	5.0	<	3.0	<	1.1
Dilution factor for DEHP 1.03	18-Feb-08	1Q08	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
Dilution factor for DEHP 1.25	5-May-08	2Q08	<	1.0	<	1.0	<	5.0	<	3.0	<	1.2
	21-Jul-08	3Q08	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
	27-Oct-08	4Q08	<	0.2	<	0.2	<	0.2	<	0.6	J	4.0
	12-Jan-09	1Q09	<	0.9	<	0.8	<	0.8	<	0.9	J	2.0
	6-Apr-09	2Q09	<	0.9	<	0.8	<	0.8	<	0.9	<	0.9
	20-Jul-09	3Q09	<	0.9	<	0.8	<	0.8	<	0.9	<	1.0
	10-Nov-09	4Q09	<	0.9	<	0.8	<	0.8	<	0.9	<	0.9
	13-Feb-10	1Q10	<	0.5		**0.59**	<	0.5	<	1.5	<	0.94
	19-Apr-10	2Q10	<	0.5	<	0.5	<	0.5	<	1.5	<	0.95
	23-Aug-10	3Q10	<	0.5	<	0.5	<	0.5	<	1.5		**4.6**
	9-Sep-10	3Q10[5]	<	0.5	<	0.5	<	0.5	<	1.5		NS
	6-Dec-10	4Q10	<	0.5	<	0.5	<	0.5	<	1.5	<	1.0
	14-Mar-11	1Q11	<	0.5	<	0.5	<	0.5	<	1.5	<	0.95

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MONITORING WELLS	SAMPLE DATE	QUARTER	Benzene		Ethylbenzene		Toluene		Total Xylenes		bis-2-Ethylhexylphthalate (DEHP)	
		UNITS	ug/l		ug/l		ug/l		ug/l		ug/l	
APPLICABLE BACKGROUND CONCENTRATION (SW-R-6). CONCENTRATION AT OR BELOW DECTION LIMIT. N.J.A.C. 7:9B-1.5 (d)6iii (4)			0.5		0.5		0.5		1.5		0.95	
DRC-2												
	11-Sep-06	3Q06	<	0.2	<	0.2	<	0.2	<	0.6	<	1.0
	6-Nov-06	4Q06	<	0.2	J	0.5	<	0.2	J	1.9	<	0.9
	6-Feb-07	1Q07	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
	25-Jun-07	2Q07	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
	10-Sep-07	3Q07	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
	3-Dec-07	4Q07	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
	18-Feb-08	1Q08	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
Dilution factor for DEHP 1.18	5-May-08	2Q08	<	1.0	<	1.0	<	5.0	<	3.0	<	1.2
	21-Jul-08	3Q08	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
	27-Oct-08	4Q08	<	0.2	<	0.2	<	0.2	<	0.6	<	0.9
	12-Jan-09	1Q09	<	0.9	<	0.8	<	0.8	<	0.9	<	1.0
	6-Apr-09	2Q09	<	0.9	<	0.8	<	0.8	<	0.9	<	1.0
	20-Jul-09	3Q09	<	0.9	<	0.8	<	0.8	<	0.9	<	0.9
	10-Nov-09	4Q09	<	0.9	<	0.8	<	0.8	<	0.9	<	0.9
	13-Feb-10	1Q10	<	0.5	<	0.5	<	0.5	<	1.5	<	0.95
	19-Apr-10	2Q10	<	0.5	<	0.5	<	0.5	<	1.5	<	0.95
	23-Aug-10	3Q10	<	0.5	<	0.5	<	0.5	<	1.5	<	0.98
	9-Sep-10	3Q10 (5)	<	0.5	<	0.5	<	0.5	<	1.5		NS
	6-Dec-10	4Q10	<	0.5	<	0.5	<	0.5	<	1.5	<	0.95
	14-Mar-11	1Q11	<	0.5	<	0.5	<	0.5	<	1.5	<	0.95
SW-R-1												
	20-Apr-05 (1)	2Q05	<	0.2		**17**	J	0.8		**99**	J	2.0
	25-Jul-05	3Q05	<	0.2	<	0.2	<	0.2	<	0.6	J	1.0
	27-Oct-05	4Q05	<	0.2	<	0.2	<	0.2	<	0.6	<	1.0
	27-Feb-06	1Q06	<	0.2	**J**	**0.3**	<	0.2	J	1.4	<	0.9
	19-Jun-06	2Q06	<	0.2	<	0.2	<	0.2	<	0.6	<	1.0
	11-Sep-06	3Q06	<	0.2	<	0.2	<	0.2	<	0.6	<	1.0
	6-Nov-06	4Q06	<	0.2	J	0.2	<	0.2	J	1.1	<	1.0
	6-Feb-07	1Q07	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
	25-Jun-07	2Q07	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
	10-Sep-07	3Q07	<	1.0	<	1.0	<	5.0	<	3.0		**1.3**
	3-Dec-07	4Q07	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
Dilution factor for DEHP 1.11	18-Feb-08	1Q08	<	1.0	<	1.0	<	5.0	<	3.0	<	1.1
Dilution factor for DEHP 1.18	5-May-08	2Q08	<	1.0		**1.2**	<	5.0		**5.9**	<	1.2
	21-Jul-08	3Q08	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
	27-Oct-08	4Q08	<	0.2	<	0.2	<	0.2	<	0.6	<	0.9
	12-Jan-09	1Q09	<	0.9	<	0.8	<	0.8	<	0.9	<	0.9
	6-Apr-09	2Q09	<	0.9	<	0.8	<	0.8	<	0.9	<	0.9
	20-Jul-09	3Q09	<	0.9	<	0.8	<	0.8	<	0.9	<	1.0
	10-Nov-09	4Q09	<	0.9	<	0.8	<	0.8	<	0.9	<	0.9
	13-Feb-10	1Q10	<	0.5		**0.55**	<	0.5		**2.8**	<	0.95
	19-Apr-10	2Q10	<	0.5		**0.64**	<	0.5		**2.5**	<	0.95
	23-Aug-10	3Q10	<	0.5	<	0.50	<	0.5	<	1.5	<	0.95
	9-Sep-10	3Q10 (5)	<	0.5	<	0.50	<	0.5	<	1.5		NS
	6-Dec-10	4Q10	<	0.5	<	0.50	<	0.5	<	1.5	<	0.95
	14-Mar-11	1Q11	<	0.5	<	0.50	<	0.5	<	1.5	<	0.95

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MONITORING WELLS	SAMPLE DATE	QUARTER	Benzene		Ethylbenzene		Toluene		Total Xylenes		bis-2-Ethylhexylphthalate (DEHP)	
		UNITS	ug/l		ug/l		ug/l		ug/l		ug/l	
APPLICABLE BACKGROUND CONCENTRATION (SW-R-6). CONCENTRATION AT OR BELOW DECTION LIMIT. N.J.A.C. 7:9B-1.5 (d)6iii (4)			0.5		0.5		0.5		1.5		0.95	
SW-R-2												
	20-Apr-05	2Q05		NS		NS		NS		NS		NS
	25-Jul-05	3Q05	<	0.2	<	0.2	<	0.2	<	0.6	<	0.9
	27-Oct-05	4Q05	<	0.2	<	0.2	<	0.2	<	0.6	<	0.9
	27-Feb-06	1Q06	<	0.2	J	0.5	<	0.2	J	2.3	<	1.0
	19-Jun-06	2Q06	<	0.2	<	0.2	<	0.2	<	0.6	<	1.0
	11-Sep-06	3Q06	<	0.2	<	0.2	<	0.2	<	0.6	<	1.0
	6-Nov-06	4Q06	<	0.2	<	0.2	<	0.2	<	0.6	<	0.9
	6-Nov-06	4Q06D	<	0.2	<	0.2	<	0.2	<	0.6	<	0.9
	6-Feb-07	1Q07	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
	25-Jun-07	2Q07	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
	10-Sep-07	3Q07	<	1.0	<	1.0	<	5.0	<	3.0		**1.7**
	4-Dec-07	4Q07	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
Dilution factor for DEHP 1.11	18-Feb-08	1Q08	<	1.0	<	1.0	<	5.0	<	3.0	<	1.1
Dilution factor for DEHP 1.14	5-May-08	2Q08	<	1.0	<	1.0	<	5.0	<	3.0	<	1.1
	21-Jul-08	3Q08	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
	27-Oct-08	4Q08	<	0.2	<	0.2	<	0.2	<	0.6	<	0.9
	12-Jan-09	1Q09	<	0.9	<	0.8	<	0.8	<	0.9	<	1.0
	6-Apr-09	2Q09	<	0.9	<	0.8	<	0.8	<	0.9	<	1.0
	20-Jul-09	3Q09	<	0.9	<	0.8	<	0.8	<	0.9	<	1.0
	10-Nov-09	4Q09	<	0.9	<	0.8	<	0.8	<	0.9	<	0.9
	13-Feb-10	1Q10	<	0.5	<	0.5	<	0.5	<	1.5	<	0.95
	19-Apr-10	2Q10	<	0.5		**0.5**	<	0.5		**2**	<	0.95
	23-Aug-10	3Q10	<	0.5	<	0.5	<	0.5	<	1.5	<	0.95
	9-Sep-10	3Q10(5)	<	0.5	<	0.5	<	0.5	<	1.5		NS
	6-Dec-10	4Q10	<	0.5	<	0.5	<	0.5	<	1.5	<	0.96
	14-Mar-11	1Q11	<	0.5	<	0.5	<	0.5	<	1.5	<	0.95
SW-R-3												
	20-Apr-05	2Q05		NS		NS		NS		NS		NS
	25-Jul-05	3Q05	<	0.2	<	0.2	<	0.2	<	0.6	<	0.9
	27-Feb-06	1Q06	<	0.2	<	0.2	<	0.2	<	0.6	<	1.0
	19-Jun-06	2Q06	<	0.2	<	0.2	<	0.2	<	0.6	<	1.0
	11-Sep-06	3Q06	<	0.2	<	0.2	<	0.2	<	0.6	J	2
	6-Nov-06	4Q06	<	0.2	<	0.2	<	0.2	<	0.6	<	0.9
	6-Feb-07	1Q07	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
	25-Jun-07	2Q07	<	1.0	<	1.0	<	5.0	<	3.0		**3**
	25-Jun-07	2Q07D	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
	10-Sep-07	3Q07	<	1.0	<	1.0	<	5.0	<	3.0		**3.9**
	4-Dec-07	4Q07	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
Dilution factor for DEHP 1.11	18-Feb-08	1Q08	<	1.0	<	1.0	<	5.0	<	3.0	<	1.1
Dilution factor for DEHP 1.05	5-May-08	2Q08	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
Dilution factor for DEHP 1.25	5-May-08	2Q08D	<	1.0	<	1.0	<	5.0	<	3.0	<	1.2
Dilution factor for DEHP 10	21-Jul-08	3Q08	<	1.0	<	1.0	<	5.0	<	3.0		**150**
	21-Jul-08	3Q08R		NA		NA		NA		NA		**26**
	15-Aug-08	3Q08(2)	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0

TABLE 7
Dayco Corporation/L.E. Carpenter Superfund Site
Surface Water Monitoring Data

MONITORING WELLS	ANALYTICAL PARAMETERS											
	SAMPLE DATE	QUARTER	Benzene		Ethylbenzene		Toluene		Total Xylenes		bis-2-Ethylhexylphthalate (DEHP)	
		UNITS	ug/l		ug/l		ug/l		ug/l		ug/l	
APPLICABLE BACKGROUND CONCENTRATION (SW-R-6). CONCENTRATION AT OR BELOW DECTION LIMIT. N.J.A.C. 7:9B-1.5 (d)6iii [4]			0.5		0.5		0.5		1.5		0.95	
	15-Aug-08	3Q08[3]	<	0.2	<	0.2	<	0.2	<	0.6	<	1.0
	27-Oct-08	4Q08	<	0.2	<	0.2	<	0.2	<	0.6	<	0.9
	27-Oct-08	4Q08D	<	0.2	<	0.2	<	0.2	<	0.6	<	1.0
	12-Jan-09	1Q09	<	0.9	<	0.8	<	0.8	<	0.9	<	1.0
	12-Jan-09	1Q09D	<	0.9	<	0.8	<	0.8	<	0.9	<	1.0
	6-Apr-09	2Q09	<	0.9	<	0.8	<	0.8	<	0.9	<	1.0
	20-Jul-09	3Q09	<	0.9	<	0.8	<	0.8	<	0.9	<	1.0
	10-Nov-09	4Q09	<	0.9	<	0.8	<	0.8	<	0.9	<	0.9
	13-Feb-10	1Q10	<	0.5	<	0.5	<	0.5	<	1.5	<	0.95
	19-Apr-10	2Q10	<	0.5	<	0.5	<	0.5	<	1.5	<	0.95
	23-Aug-10	3Q10	<	0.5	<	0.5	<	0.5	<	1.5	<	0.95
	9-Sep-10	3Q10[5]	<	0.5	<	0.5	<	0.5	<	1.5		NS
	6-Dec-10	4Q10	<	0.5	<	0.5	<	0.5	<	1.5	<	0.95
	14-Mar-11	1Q11	<	0.5	<	0.5	<	0.5	<	1.5	<	0.95
SW-R-4												
	20-Apr-05	2Q05		NS		NS		NS		NS		NS
	25-Jul-05	3Q05	<	0.2	<	0.2	<	0.2	<	0.6	<	0.9
	27-Feb-06	1Q06	<	0.2	<	0.2	<	0.2	<	0.6	<	0.9
	19-Jun-06	2Q06	<	0.2	<	0.2	<	0.2	<	0.6	<	1.0
	11-Sep-06	3Q06	<	0.2	<	0.2	<	0.2	<	0.6	<	1.0
	6-Nov-06	4Q06	<	0.2	<	0.2	<	0.2	<	0.6	<	0.9
	6-Feb-07	1Q07	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
	25-Jun-07	2Q07	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
	10-Sep-07	3Q07	<	1.0	<	1.0	<	5.0	<	3.0		**19**
	4-Dec-07	4Q07	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
Dilution factor for DEHP 1.11	18-Feb-08	1Q08	<	1.0	<	1.0	<	5.0	<	3.0	<	1.1
	5-May-08	2Q08	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
	21-Jul-08	3Q08	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
	21-Jul-08	3Q08D	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
	27-Oct-08	4Q08	<	0.2	<	0.2	<	0.2	<	0.6	<	1.0
	12-Jan-09	1Q09	<	0.9	<	0.8	<	0.8	<	0.9	<	1.0
	6-Apr-09	2Q09	<	0.9	<	0.8	<	0.8	<	0.9	<	1.0
	20-Jul-09	3Q09	<	0.9	<	0.8	<	0.8	<	0.9	<	1.0
	10-Nov-09	4Q09	<	0.9	<	0.8	<	0.8	<	0.9	<	0.9
	13-Feb-10	1Q10	<	0.5	<	0.5	<	0.5	<	1.5	<	0.95
	19-Apr-10	2Q10	<	0.5	<	0.5	<	0.5	<	1.5	<	0.95
	23-Aug-10	3Q10	<	0.5	<	0.5	<	0.5	<	1.5	<	0.95
	9-Sep-10	3Q10[5]	<	0.5	<	0.5	<	0.5	<	1.5		NS
	6-Dec-10	4Q10	<	0.5	<	0.5	<	0.5	<	1.5	<	0.95
	14-Mar-11	1Q11	<	0.5	<	0.5	<	0.5	<	1.5	<	0.95
SW-R-5												
	20-Apr-05	2Q05		NS		NS		NS		NS		NS
	25-Jul-05	3Q05	<	0.2	<	0.2	<	0.2	<	0.6	<	0.9
	27-Feb-06	1Q06	<	0.2	<	0.2	<	0.2	<	0.6	<	1.0
	19-Jun-06	2Q06	<	0.2	<	0.2	<	0.2	<	0.6	<	1.0

TABLE 7
Dayco Corporation/L.E. Carpenter Superfund Site
Surface Water Monitoring Data

MONITORING WELLS	ANALYTICAL PARAMETERS											
	SAMPLE DATE	QUARTER	Benzene		Ethylbenzene		Toluene		Total Xylenes		bis-2-Ethylhexylphthalate (DEHP)	
		UNITS	ug/l		ug/l		ug/l		ug/l		ug/l	
APPLICABLE BACKGROUND CONCENTRATION (SW-R-6). CONCENTRATION AT OR BELOW DECTION LIMIT. N.J.A.C. 7:9B-1.5 (d)6iii [4]			0.5		0.5		0.5		1.5		0.95	
	11-Sep-06	3Q06	<	0.2	<	0.2	<	0.2	<	0.6	<	0.9
	6-Nov-06	4Q06	<	0.2	<	0.2	<	0.2	<	0.6	<	0.9
	7-Feb-07	1Q07	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
	25-Jun-07	2Q07	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
	10-Sep-07	3Q07	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
	10-Sep-07	3Q07D	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
	4-Dec-07	4Q07	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
	18-Feb-08	1Q08	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
Dilution factor for DEHP 1.18	5-May-08	2Q08	<	1.0	<	1.0	<	5.0	<	3.0	<	1.2
	21-Jul-08	3Q08	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
	27-Oct-08	4Q08	<	0.2	<	0.2	<	0.2	<	0.6	<	0.9
	12-Jan-09	1Q09	<	0.9	<	0.8	<	0.8	<	0.9	<	1.0
	6-Apr-09	2Q09	<	0.9	<	0.8	<	0.8	<	0.9	<	0.9
	20-Jul-09	3Q09	<	0.9	<	0.8	<	0.8	<	0.9	<	1.0
	10-Nov-09	4Q09	<	0.9	<	0.8	<	0.8	<	0.9	<	1.0
SW-R-6												
	27-Feb-06	1Q06	<	0.2	<	0.2	<	0.2	<	0.6	<	1.0
	19-Jun-06	2Q06	<	0.2	<	0.2	<	0.2	<	0.6	<	1.0
	11-Sep-06	3Q06	<	0.2	<	0.2	<	0.2	<	0.6	<	0.9
	6-Nov-06	4Q06	<	0.2	<	0.2	<	0.2	<	0.6	<	0.9
	6-Feb-07	1Q07	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
	25-Jun-07	2Q07	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
	10-Sep-07	3Q07	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
	4-Dec-07	4Q07	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
Dilution factor for DEHP 1.14	18-Feb-08	1Q08	<	1.0	<	1.0	<	5.0	<	3.0	<	1.1
Dilution factor for DEHP 1.11	5-May-08	2Q08	<	1.0	<	1.0	<	5.0	<	3.0	<	1.1
	21-Jul-08	3Q08	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
	27-Oct-08	4Q08	<	0.2	<	0.2	<	0.2	<	0.6	<	0.9
	12-Jan-09	1Q09	<	0.9	<	0.8	<	0.8	<	0.9	<	1.0
	6-Apr-09	2Q09	<	0.9	<	0.8	<	0.8	<	0.9	<	0.9
	20-Jul-09	3Q09	<	0.9	<	0.8	<	0.8	<	0.9	<	0.9
	10-Nov-09	4Q09	<	0.9	<	0.8	<	0.8	<	0.9	<	0.9
	13-Feb-10	1Q10	<	0.5	<	0.5	<	0.5	<	1.5	<	0.95
	19-Apr-10	2Q10	<	0.5	<	0.5	<	0.5	<	1.5	<	0.95
	23-Aug-10	3Q10	<	0.5	<	0.5	<	0.5	<	1.5	<	0.99
	9-Sep-10	3Q10[5]	<	0.5	<	0.5	<	0.5	<	1.5		NS
	7-Dec-10	4Q10	<	0.5	<	0.5	<	0.5	<	1.5	<	0.95
	14-Mar-11	1Q11	<	0.5	<	0.5	<	0.5	<	1.5	<	0.95
				.								
RINSE BLANK												
RB-01	18-Feb-08	1Q08	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
RB-01	5-May-08	2Q08	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
RB-01	21-Jul-08	3Q08	<	1.0	<	1.0	<	5.0	<	3.0	<	1.0
RB-01	27-Oct-08	4Q08	<	0.2	<	0.2	<	0.2	<	0.6	<	0.9
RB-01	10-Nov-09	4Q09	<	0.9	<	0.8	<	0.8	<	0.9	<	1.0
RB-01	13-Feb-10	1Q10	<	0.5	<	0.5	<	0.5	<	1.5	<	1.0
RB-01	19-Apr-10	2Q10	<	0.5	<	0.5	<	0.5	<	1.5	<	1.0
RB-01	23-Aug-10	3Q10	<	0.5	<	0.5	<	0.5	<	1.5	<	1.0

TABLE 7
Dayco Corporation/L.E. Carpenter Superfund Site
Surface Water Monitoring Data

MONITORING WELLS	SAMPLE DATE	QUARTER	Benzene		Ethylbenzene		Toluene		Total Xylenes		bis-2-Ethylhexylphthalate (DEHP)	
		ANALYTICAL PARAMETERS										
		UNITS	ug/l		ug/l		ug/l		ug/l		ug/l	
APPLICABLE BACKGROUND CONCENTRATION (SW-R-6). CONCENTRATION AT OR BELOW DECTION LIMIT. N.J.A.C. 7:9B-1.5 (d)6iii [(4)]			0.5		0.5		0.5		1.5		0.95	
	9-Sep-10	3Q10[(5)]	<	0.5	<	0.5	<	0.5	<	1.5		NS
RB-01	9-Dec-10	4Q10	<	0.5	<	0.5		0.5	<	1.5		**16**
RB-01	17-Mar-11	1Q11	<	0.5	<	0.5	<	0.5	<	1.5	<	0.95

LEGEND

NA = Not Applicable

NS = Not Sampled

D = Duplicate sample

R = Sample was re-run by the laboratory

B: Analyte also detected in blank

J: Estimated value. Value is greater than or equal to the Method Detection Limit (MDL) and less than the Limit of Quantitation (LOQ)

Concentration exceeds NJSWQS (SW-R-6 concentrations) **38**

ug/L = micrograms per liter

Surface Water Quality Standard Reference: N.J.A.C 7:9B October 2006.

(Dover) - Washington Pond outlet downstream to Rt. 46 bridge Cat 1 FW2-TM(C1)

NOTES

* = Detection limit is elevated due to interference from other parameter detections. Laboratory will be contacted to lower benzene detection limit to be below the NJSWQS.

(1) One surface water sample was collected near the edge of the river immediately adjacent to the location of absorbent booms that were placed in order to prevent any migration into the river of sheen observed on top of quiescent water ponded within the wetland area. Due to bottle mislabeling and laboratory error, each of the five river sample bottles (R-1 through R-5) were analyzed individually instead of as a whole set. The highest concentration detected in any of the five laboratory results for the river sample are listed under SW-R-1 for April 2005.

(2) Due to believed lab contamination of the original sample, surface water location SW-R-3 was resampled and the sample alaquot was split between two labs. These results are from Environmental Science Corporation (ESC).

(3) Due to believed lab contamination of the original sample, surface water location SW-R-3 was resampled and the sample alaquot was split between two labs. These results are from Lancaster Laboratories (Lancaster).

(4) Per NJDEP request, along with a change in laboratories, the detection limits for the Site COCs were lowered.

(5) Due to laboratory error, original BTEX samples were analyzed outside the holding time. Surface water locations were resampled and analyzed within the appropriate holding times.

TABLE 8
Dayco Corporation/L.E. Carpenter Superfund Site
MW-30 AOC Sampling Summary Table

Area of Concern	Sample Locations	Medium	Sample Depth	Parameters	Method	SOP Reference	Sampling Location Rationale
Remaining Source(s) Area							
	SB01 through SB16	LNAPL in soil & groundwater	Surface to Non-Detect	LNAPL by hydrophobic dye	Geoprobe soil sample	Sections 3.11 & 3.12	
	3 Selected locations	Soil	1 Peak & 1 Non-Detect Hydrophobic Dye Response	BTEX and DEHP	Geoprobe soil sample	Section 3.11	
	3 Selected locations	Soil	Approx. 5' Below Non-Detect Hydrophobic Dye Response	BTEX and DEHP	Geoprobe soil sample	Section 3.11	
	Up to 4 representative samples	Soil	Representative samples from permeable soil units	Total chromium and TOC	Geoprobe soil sample	Section 3.11	
Groundwater							
	Routine quarterly sampling	Groundwater	Existing PRMP Wells	BTEX and DEHP, MNA parameters, and TOC	Low flow sampling methods (existing routine methods)	Section 3.12	Existing monitoring wells
	MW36S	Groundwater	Water table	BTEX and DEHP, MNA parameters, and TOC	Low flow sampling methods (existing routine methods)	Section 3.12	To delineate the COCs in groundwater in the vicinity of MW 30s
Groundwater Enhanced Bioremedation Pilot Study							
	Air Sparge wells	Injected air	Below depth of COCs	Air injection rate and pressure			The air sparge wells will be installed in a triangular pattern spaced 25 ft apart to a depth below the observed COCs in excess of the groundwater standard based on surrounding monitoring well nests.
	Observation wells Frequency = twice before startup Weekly for 4 weeks after startup Every week until completion	Groundwater	Water table	*<u>Field:</u>* DO, pH, ORP, conductivity, turbidity, temperature, ferrous iron, alkalinity, and CO2 *<u>Laboratory</u>* : BTEX, and DEHP, heterotrophic plate count, TSS, TDS, nitrate nitrogen, NH4, total phosphorus, sulfate, methane, and TOC	Low flow sampling methods (existing routine methods)	Section 3.12	One observation well installed in the center of the triangle s intended to see rapid and intense response from the air sparge wells and will be used early in the pilot study to determine if aeration of the groundwater results in enhancing biodegradation. The other two wells will be downgradient of the center of the air sparge wells and will be used early in the pilot study to assess the radius of influence of the air sparge system.
Sediments							
	Quarterly surface water sample locations (12)	Sediments	Surfcial	*<u>Field:</u>* DO, pH, ORP, conductivity *<u>Laboratory</u>* : BTEX, DEHP, and moisture	Grab	Section 3.13	Sample locations coincide with existing surface water sampling locations

TABLE 9
Dayco Corporation/L.E. Carpenter Superfund Site
Well Abandonment and Management

WELL	WELL TYPE	WELL INFORMATION				PROPOSED MANAGEMENT	ABANDONMENT METHODOLOGY	NJDEP NOTIFICATION BY CERTIFIED LICENSED DRILLER REQUIRED PRIOR TO ABANDONMENT PER N.J.A.C 7:9D-3.1(g)(2)	JUSTIFICATION
		TOTAL WELL DEPTH (FT)	WELL DIAMETER (INCHES)	GROUND ELEVATION (FT)	WELL BOTTOM ELEVATION (FT)				
GEI-2I	Piezometer	46.28	2.00	635.32	589.04	ABANDON	GROUT	X	WITHIN LIMITS OF CONSTRUCTION
GEI-2S	Piezometer	22.21	2.00	634.86	612.65	ABANDON	GROUT	X	WITHIN LIMITS OF CONSTRUCTION
MW-19	Monitoring Well	17.00	4.00	636.22	619.22	ABANDON	GROUT	X	WITHIN LIMITS OF CONSTRUCTION
MW-19-1	Monitoring Well	17.00	4.00	635.93	618.93	ABANDON	GROUT	X	WITHIN LIMITS OF CONSTRUCTION
MW-19-2	Monitoring Well	16.00	4.00	636.46	620.46	ABANDON	GROUT	X	WITHIN LIMITS OF CONSTRUCTION
MW-19-3	Monitoring Well	16.00	4.00	636.97	620.97	ABANDON	GROUT	X	WITHIN LIMITS OF CONSTRUCTION
MW-19-4	Monitoring Well	16.00	4.00	635.69	619.69	ABANDON	GROUT	X	WITHIN LIMITS OF CONSTRUCTION
MW-19-5	Monitoring Well	16.00	2.00	635.93	619.93	ABANDON	GROUT	X	WITHIN LIMITS OF CONSTRUCTION
MW-19-6	Monitoring Well	20.00	2.00	636.17	616.17	ABANDON	GROUT	X	WITHIN LIMITS OF CONSTRUCTION
MW-19-7	Monitoring Well	20.00	2.00	635.31	615.31	ABANDON	GROUT	X	WITHIN LIMITS OF CONSTRUCTION
MW-19-8	Monitoring Well	20.00	2.00	635.82	615.82	PROTECT			DOWNGRADIENT COMPLIANCE/MNA & OUTSIDE CONSTRUCTION AREA
MW-19-9D	Monitoring Well	35.00	2.00	636.39	601.39	ABANDON	GROUT	X	DAMAGED
MW-19-10	Monitoring Well					ABANDON	GROUT	X	DAMAGED
MW-19-11	Monitoring Well					PROTECT			DOWNGRADIENT COMPLIANCE/MNA & OUTSIDE CONSTRUCTION AREA
MW-19-12	Monitoring Well					PROTECT			DOWNGRADIENT COMPLIANCE/MNA & OUTSIDE CONSTRUCTION AREA

LEGEND
S: Shallow Aquifer System
I: Intermediate Aquifer System
D: Deep Aquifer System
MNA: Monitored Natural Attenuation
MSL: Mean Sea Level
FT: Feet

NOTES:
All wells proposed for abandonment will be performed in accordance with N.J.A.C. 7:9D-3.1
N.J.A.C 7:9D-3.1(g)(2): Requires driller to contact the State prior to abandonment if well is contaminated with a hazardous waste [LNAPL]
- : No construction information available to determine well depth elevation. Grouting will be abandonment methodology
Total depth of well (MSL) calculated by subtracting the depth of the well from the ground elevation [if data is available]
N.J.A.C 7:9D will be used for abandonment guidance

Figures

RMT COMPUTER AIDED DESIGN AND DRAFTING • CREATING BALANCE

N

SOURCE

BASE MAP DEVELOPED FROM THE DOVER, NEW JERSEY 7.5 MINUTE U.S.G.S. TOPOGRAPHIC QUADRANGLE MAP, DATED 1954, PHOTOREVISED 1981.

0 2000' 4000'

APPROXIMATE SCALE IN FEET

RMT

3754 Ranchero Drive
Ann Arbor, MI 48108-2237
Phone: 734-971-7080 • Fax: 734-971-9022

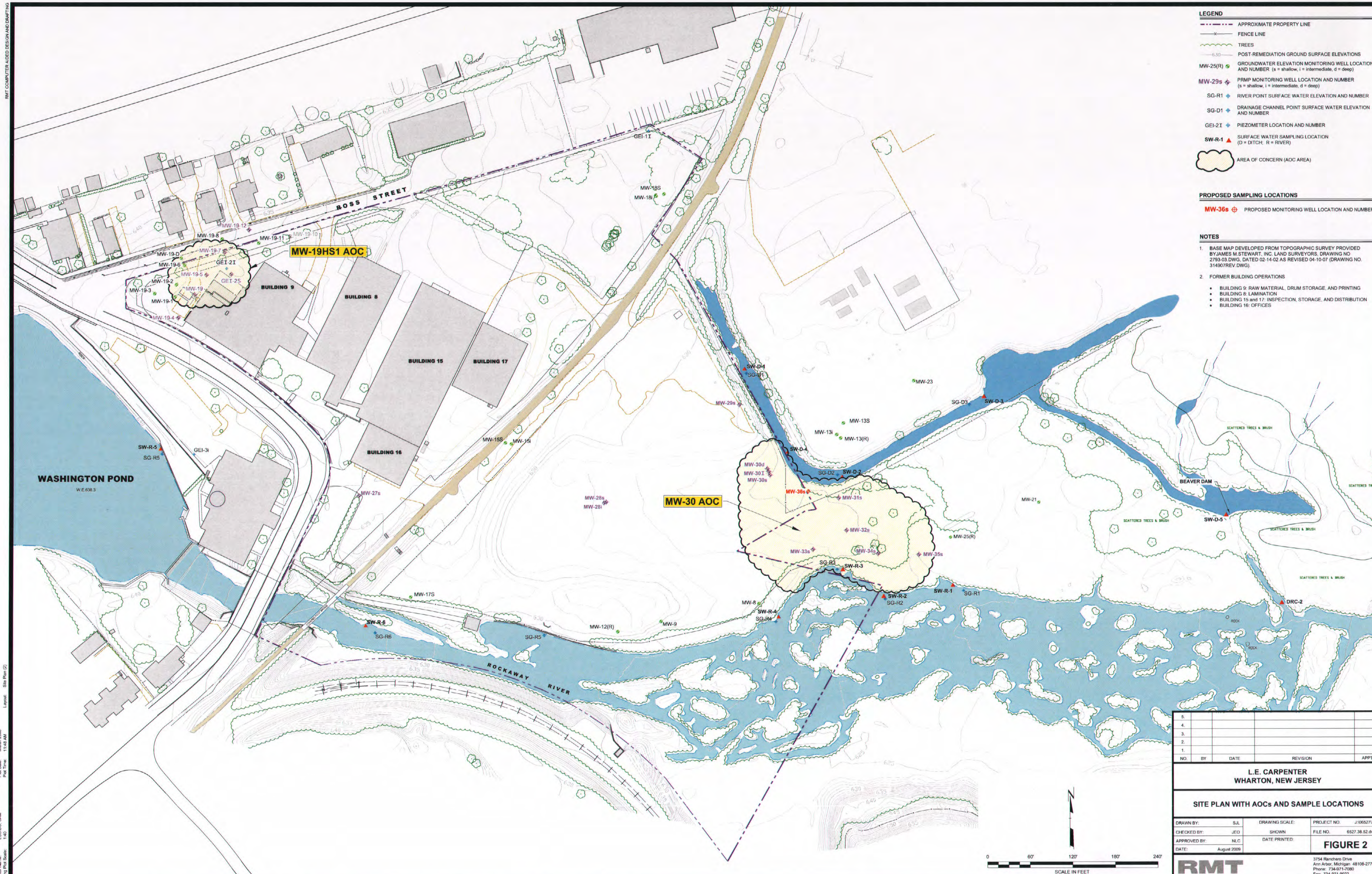
L.E. CARPENTER
WHARTON, NEW JERSEY

SITE LOCATION MAP

DRAWN BY:	SJL
CHECKED BY:	JEO
APPROVED BY:	JDD,NLC
DRAWING SCALE:	SHOWN
PROJECT NUMBER:	J:\06527\38
FILE NUMBER:	6527.38.51.dwg
DATE:	August 2009

FIGURE 1

PLOT DATA:
Drawing Name: J:\06527\38\6527.38.51.dwg
Operator Name: LUCIDO, SAM
Drawing Plot Scale: 0.000500
Dwg Size: 0.10 Mb
Plot Date: August 31, 2009
Plot Time: 11:48 AM
Attached Xref's: Dover New Jersey; RMT Logostrip (CLR);
Attached Images:
Layout: Site Location Map (1)


LEGEND
APPROXIMATE PROPERTY LINE
FENCE LINE
TREES
POST-REMEDIATION GROUND SURFACE ELEVATIONS
MW-25(R) GROUNDWATER ELEVATION MONITORING WELL LOCATION AND NUMBER (s = shallow, i = intermediate, d = deep)
MW-29s PRMP MONITORING WELL LOCATION AND NUMBER (s = shallow, i = intermediate, d = deep)
SG-R1 RIVER POINT SURFACE WATER ELEVATION AND NUMBER
SG-D1 DRAINAGE CHANNEL POINT SURFACE WATER ELEVATION AND NUMBER
GEI-2I PIEZOMETER LOCATION AND NUMBER
SW-R-1 SURFACE WATER SAMPLING LOCATION (D = DITCH; R = RIVER)
AREA OF CONCERN (AOC AREA)
PROPOSED SAMPLING LOCATIONS
MW-36s PROPOSED MONITORING WELL LOCATION AND NUMBER
NOTES
1. BASE MAP DEVELOPED FROM TOPOGRAPHIC SURVEY PROVIDED BY JAMES M.STEWART, INC. LAND SURVEYORS, DRAWING NO 2793-03.DWG, DATED 02-14-02 AS REVISED 04-10-07 (DRAWING NO. 314907REV.DWG).
2. FORMER BUILDING OPERATIONS
• BUILDING 9: RAW MATERIAL, DRUM STORAGE, AND PRINTING
• BUILDING 8: LAMINATION
• BUILDING 15 and 17: INSPECTION, STORAGE, AND DISTRIBUTION
• BUILDING 16: OFFICES
ROSS STREET
MW-19HS1 AOC
BUILDING 9
BUILDING 8
BUILDING 15
BUILDING 17
BUILDING 16
WASHINGTON POND
MW-30 AOC
BEAVER DAM
ROCKAWAY RIVER
SCALE IN FEET
L.E. CARPENTER
WHARTON, NEW JERSEY
SITE PLAN WITH AOCs AND SAMPLE LOCATIONS
DRAWN BY: SJL
CHECKED BY: JEO
APPROVED BY: NLC
DATE: August 2009
DRAWING SCALE: SHOWN
PROJECT NO. J10652738
FILE NO. 6527.38.52.dwg
FIGURE 2
RMT
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Phone: 734-971-7080
Fax: 734-971-9022

RMT COMPUTER AIDED DESIGN AND DRAFTING

LEGEND

- FENCE LINE
- TREES

NOTES

1. BASE MAP DEVELOPED FROM TOPOGRAPHIC SURVEY PROVIDED BYJAMES M.STEWART, INC. LAND SURVEYORS, DRAWING NO 2793-03.DWG, DATED 02-14-02.
2. AERIAL PHOTOGRAPH PROVIDED BY JAMES M. STEWART, INC. LAND SURVEYORS, DATED 02-14-02.

0 100' 200' 300' 400'
SCALE IN FEET

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L.E. CARPENTER
WHARTON, NEW JERSEY

PRE SOURCE REMOVAL
AERIAL PHOTO AND TOPOGRAPHIC MAP

DRAWN BY: SJL	DRAWING SCALE:	PROJECT NO. J:\06527\38	
CHECKED BY: JEO	SHOWN	FILE NO. 6527.38.53.dwg	
APPROVED BY: JDD	DATE PRINTED:	**FIGURE 3**	
DATE: August 2008			

RMT

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Drawing Name: J:\06527\38\6527.38.53.dwg
Operator Name: LUCIDO, SAM
Drawing Plot Scale: 1:40
Dwg Size: 0.19 Mb
Plot Date: March 2008
Plot Time: 11:48 AM
Layout: Pre-Source Photo Map (3)

LEGEND

—x—	FENCE LINE
~~	TREES

NOTES

1. BASE MAP DEVELOPED FROM TOPOGRAPHIC SURVEY PROVIDED BYJAMES M.STEWART, INC. LAND SURVEYORS, DRAWING NO 2793-03.DWG, DATED APRIL 2007.
2. AERIAL PHOTOGRAPH PROVIDED BY JAMES M. STEWART, INC. LAND SURVEYORS, DATED APRIL 2007.

0 100' 200' 300' 400'
SCALE IN FEET

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L.E. CARPENTER
WHARTON, NEW JERSEY

POST SOURCE REMOVAL
AERIAL PHOTO AND TOPOGRAPHIC MAP

DRAWN BY:	SJL	DRAWING SCALE:	PROJECT NO.	J:\06527\38
CHECKED BY:	JEO	SHOWN	FILE NO.	6527.38.54.dwg
APPROVED BY:	JDD	DATE PRINTED:	**FIGURE 4**	
DATE:	August 2008			

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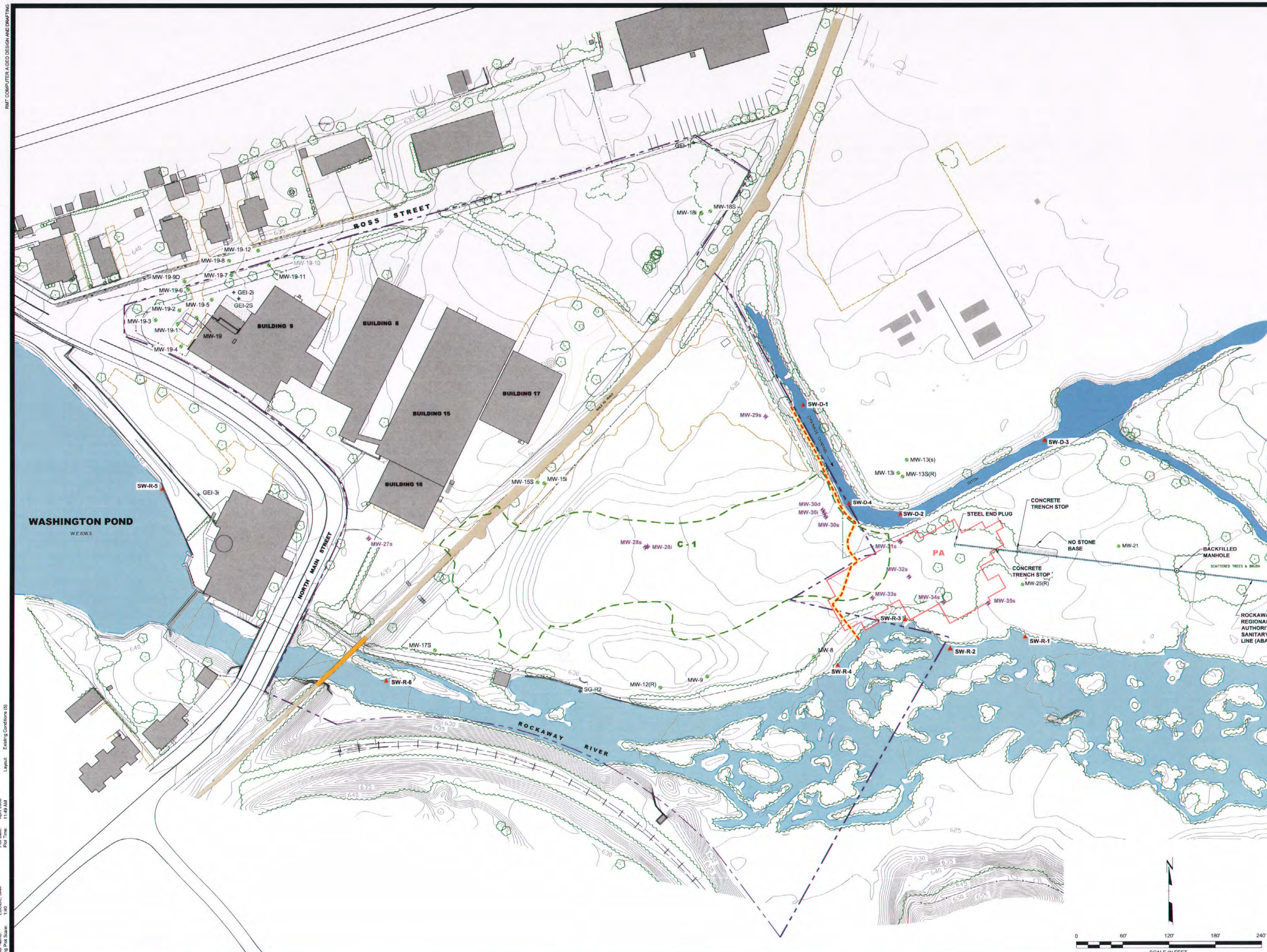

LEGEND

- APPROXIMATE PROPERTY LINE
- FENCE LINE
- TREES
- 630 — POST-REMEDIATION GROUND SURFACE ELEVATIONS CONTOUR INTERVAL = 1 ft.
- MW-25(R) — GROUNDWATER ELEVATION MONITORING WELL LOCATION AND NUMBER (s = shallow, i = intermediate, d = deep)
- MW-29s — PRMP MONITORING WELL LOCATION AND NUMBER (s = shallow, i = intermediate, d = deep)
- SG-R1 — RIVER POINT SURFACE WATER ELEVATION AND NUMBER
- SG-D1 — DRAINAGE CHANNEL POINT SURFACE WATER ELEVATION AND NUMBER
- GEI-2i — PIEZOMETER LOCATION AND NUMBER
- SW-R-1 — SURFACE WATER SAMPLING LOCATION (D = DITCH; R = RIVER)
- PA — AREA WHERE PCB IMPACTED SOILS WERE EXCAVATED
- C-1 — OUTLINE OF 2005 SOURCE REDUCTION AREA AND SUBSURFACE SLURRY MONOLITH
- WESTERN BOUNDARY OF REGULATED WETLAND
- ABANDONED ROCKAWAY REGIONAL SEWER LINE

NOTES

1. BASE MAP DEVELOPED FROM TOPOGRAPHIC SURVEY PROVIDED BYJAMES M.STEWART, INC. LAND SURVEYORS, DRAWING NO 2793-03.DWG, DATED 02-14-02 AS REVISED 04-10-07 (DRAWING NO. 314907REV.DWG).
2. FORMER BUILDING OPERATIONS
   - BUILDING 9: RAW MATERIAL, DRUM STORAGE, AND PRINTING
   - BUILDING 8: LAMINATION
   - BUILDING 15 and 17: INSPECTION, STORAGE, AND DISTRIBUTION
   - BUILDING 16: OFFICES
3. AS DESCRIBED IN THE November 2005 RAR (SEE FIGURE 9 IN THAT REPORT), THE SLURRY MONOLITH AT AND PARALLEL TO THE DRAINAGE CHANNEL DITCH ENDS APPROXIMATELY 10 FEET WEST OF THE ACTUAL WATERS EDGE.

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L.E. CARPENTER
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EXISTING CONDITIONS

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DATE: August 2008		

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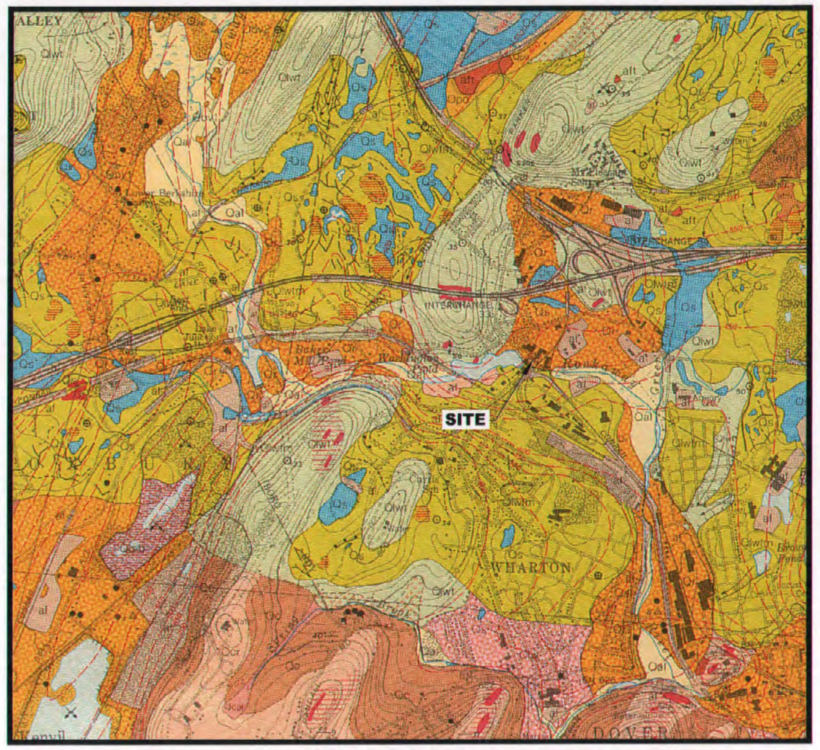


GEOLOGIC MAP

0 1750' 3500' 5250' 7000'
SCALE IN FEET

POST-GLACIAL DEPOSITS (HOLOCENE AND LATE WISCONSINAN)

- af — Artificial Fill: Excavated till, sand, gravel, and rock; construction debris (brick, concrete, asphalt); industrial materials (foundry sand, cinders and slag).
- afm — Mine Tailings: Piles and embankments of waste rock excavated from iron mines and rock quarries.
- Trash Fill: Trash and construction debris mixed and covered with excavated till and weathered bedrock.
- Qal — Alluvium: Silt and fine sand; minor clay and pebble to cobble gravel.
- Swamp and Marsh Deposits: Typically gray silt and clay with minor sand overlain by brown peat, in turn overlain by dark brown to black muck and organic silt.

MAP SYMBOLS

- Bedrock Outcrop: Elevation of bedrock surface, contour interval 50 feet (100 feet where data is sparse).
- Elevation of Bedrock Surface: Contour interval 50 feet.

GLACIAL DEPOSITS (LATE WISCONSINAN)

Berkshire Valley Deposits: Fluvial-deltaic units (Qbv1, Qbv2, Qbv3, Qbv4) overlying sediments of at least three sequentially filled, unstable proglacial lakes dammed on the south by the Terminal Moraine or older Berkshire Valley units. Deposits in the lakes include sublacustrine and collapsed deltaic sand and gravel (Qlbv1, Qlbv2, Qlbv3, Qlbv4) and lake-bottom and deltaic sand and silt (Qlbvlb).

- Qbv2 — Qbv2: Coarse cobble and boulder gravel grading southward to cobble gravel, then pebble gravel and pebbly sand.

Glacial Lake Denville Deposits: Sediment deposited in glacial Lake Denville. At the Terminal Moraine, sublacustrine sand and gravel (Qld1) and lake-bottom and deltaic fine sand and silt (Qld1b1) deposited during advance of ice are overlain by till of the moraine (Qlwtm, described below). North of the Terminal Moraine units Qld2 (sublacustrine and deltaic sand and gravel) and Qldlb2 (lake-bottom and deltaic fine sand and silt) were deposited during retreat of ice from the Terminal Moraine.

- Qr — Rockaway River Outwash: Chiefly cobble gravel. Deposited by meltwater descending the Rockaway valley and entering from tributaries to the north. In Rockaway Borough the deposit is incised into till of the Terminal Moraine.

GLACIAL AND NON-GLACIAL DEPOSITS (PRE-LATE WISCONSINAN)

Glacial Lake Dover Deposits: Lake-bottom and deltaic fine sand and silt (Qldolb) and deltaic sand and gravel (Qldo) deposited in glacial Lake Dover.

- Qlwt — Till: Unstratified and unsorted boulders, cobbles, and pebbles in a yellowish-brown (10YR5/4-5/6) (oxidized), grayish-brown (10YR5/2) (unoxidized) silty fine sand to fine to medium sand matrix.
- Qlwtm — Till of the Terminal Moraine: Yellowish-brown to grayish-brown till as above forming ridge- and kettle topography of the Terminal Moraine.

Glacial and Non-glacial Deposits (Pre-late Wisconsinan)

Colluvium: Unstratified and unsorted boulders, cobbles, and pebbles of angular bedrock debris and some rounded erratics in an orange-brown silty sand matrix.

Colluvium and Weathered Bedrock: Discontinuous colluvium, as above.

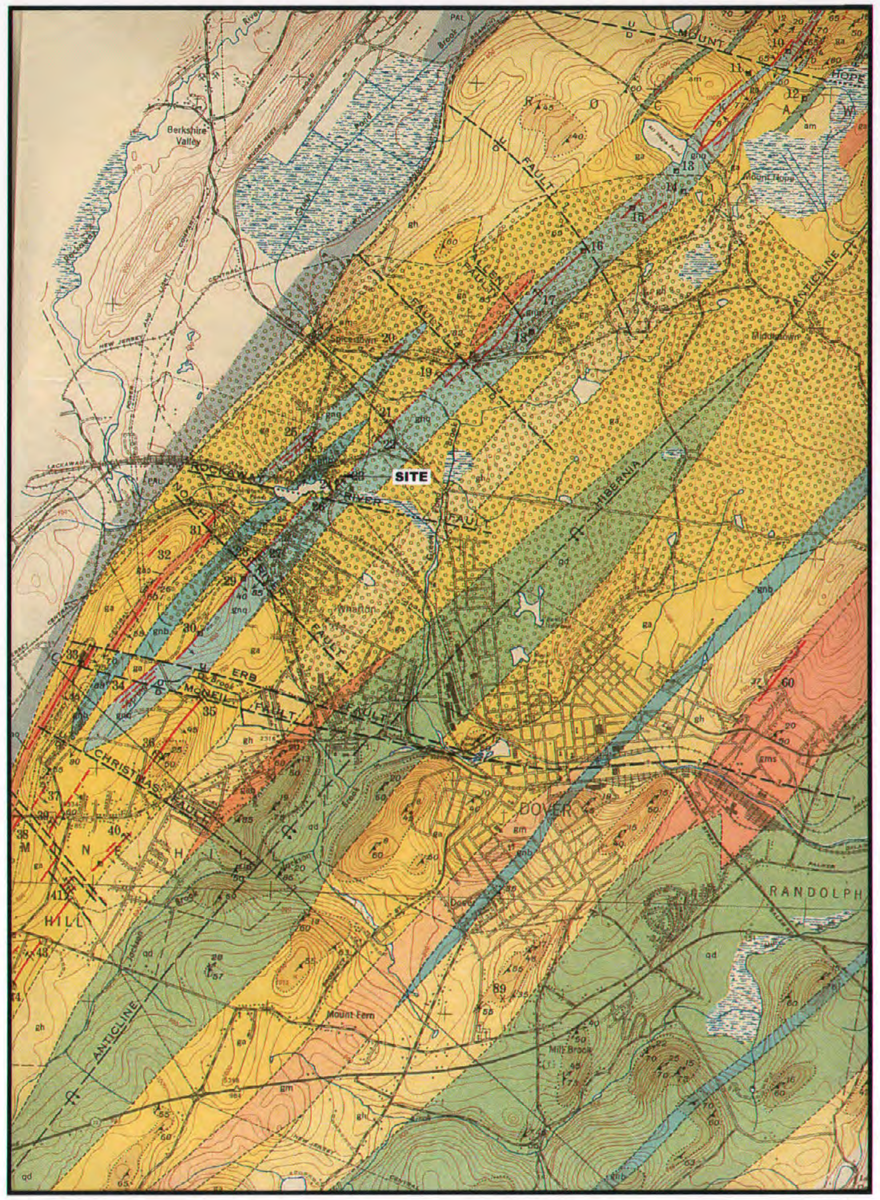
- Qc — Colluvium: Unstratified and unsorted boulders, cobbles, and pebbles of angular bedrock debris and some rounded erratics in an orange-brown silty sand matrix. Partly of late Wisconsinan age. May be as much as 50 feet thick at the base of long, steep slopes
- Qcr — Colluvium and Weathered Bedrock: Discontinuous colluvium, as above, generally less than 10 feet thick, overlying weathered bedrock. The weathered bedrock ranges from sandy (minor clayey sand) saprolite to a rubble of angular cobbles and boulders of fractured rock with little or no matrix. It may be as much as 50 feet thick, but thickness is quite variable. In places the colluvium may be replaced by a diamict produced by in-place mixing of pre-late Wisconsinan till and underlying weathered bedrock, with little or no downslope movement. Partly of late Wisconsinan age.

Surficial Geologic and Glacial Map Source:
Stanford (1989), *Surficial Geologic map of the Dover Quadrangle, Morris and Sussex Counties, New Jersey*, New Jersey Geological Survey Geologic Map Series 89-2.

MAXIMUM EXTENT OF WISCONSINAN GLACIATION

0 1750' 3500' 5250' 7000'
SCALE IN FEET

LEGEND
Wm - Whitman very stony loam
Ua - Urban land
RgA - Ridgebury very stony loam



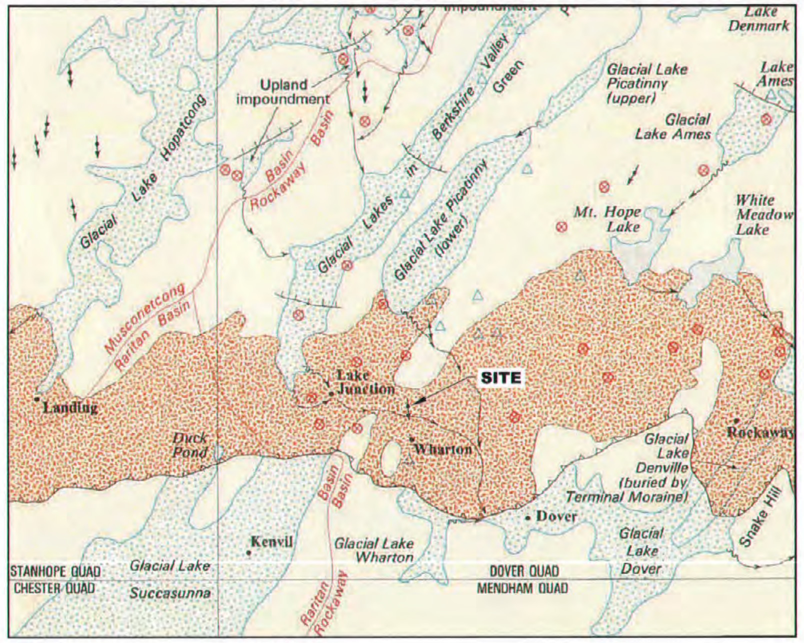
SEDIMENTARY ROCKS
- Marine deposits
- Undifferentiacated sedimentary rocks
- Alaskite
- Hornblende granite
- Hornblende granite and alaskite
- Alibite-oligoclase granite
- Alibite-oligoclase granite
- Quartz diorite and relaced facies
- Amphibolite and related rocks
- Oligoclase-quartz-biotite gneiss
- Biotite-quartz-feldspar gneiss

Magnetite deposits, showing dip
Known ore, in part mined out
Line of strong to moderate magnetic attraction
Concealed magnetite deposits
Mine
Shaft
Prospect

Geologic Map Source:
Sims, Davidson, and Koch (1949), *Geology and Magnetite Deposits of Dover District, Morris County, New Jersey*, US Geological Survey Professional Paper 287.

SITE BEDROCK GEOLOGY MAP

0 2500' 5000' 7500' 10000'
SCALE IN FEET



SOILS MAP

0 6000' 12,000' 18,000' 24,000'
SCALE IN MILES

Soils Map Source:
Soil Survey of Morris County, New Jersey, United States Department of Agriculture, 1976.

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L.E. CARPENTER
WHARTON, NEW JERSEY

SURFICIAL SOILS AND GEOLOGIC MAPS

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APPROVED BY: JDD	DATE PRINTED:	**FIGURE 6**	
DATE: August 2008			

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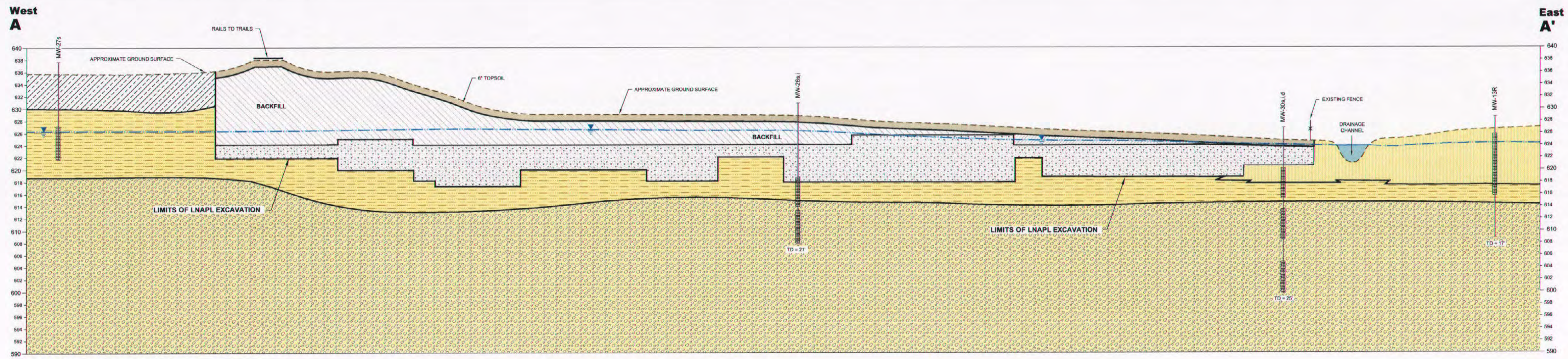
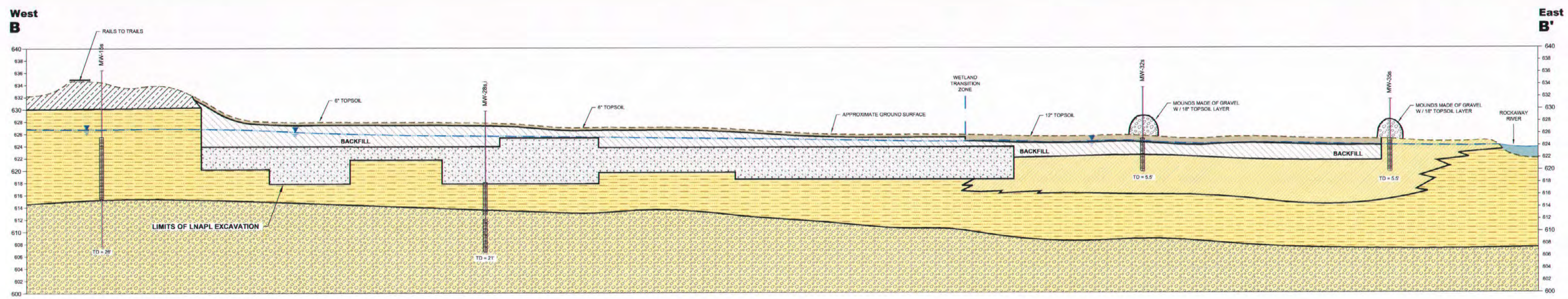




LEGEND

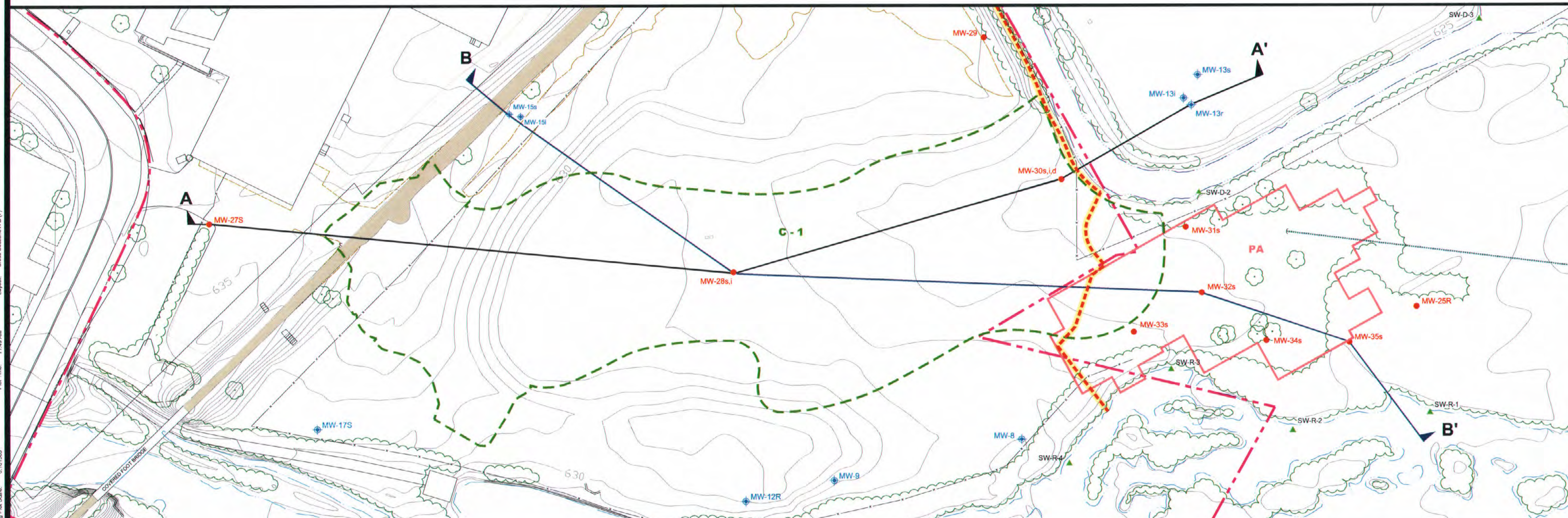
- GROUND SURFACE
- TOPSOIL
- NATIVE SOILS
- SURFACE WATER
- BACKFILL - PREDOMINANTLY RECYCLED MEDIUM TO COARSE SAND FROM TRICON MT. HOPE
- SLURRY MONOLITH

GENERAL SOIL TYPES

- HISTORICAL FILL (PRE-LEC) - PREDOMINANTLY SAND AND GRAVEL WITH PIECES OF BROKEN BRICK AND CONCRETE, AND SOME MINE TAILINGS
- PRIMARILY ALLUVIAL WITH SOIL MATRIX CONTAINING SILT, FINE SAND, AND SOME CLAYEY LENSES AND SOME COBBLES, BOULDERS, AND GRAVEL
- COARSE-GRAINED SOILS WITH VARIABLE MIXTURES OF COBBLES, BOULDERS, SAND, SILT, AND CLAY
- PREDOMINANTLY CLAY - DENSE, PLASTIC WITH TRACE TO SOME SAND AND OR GRAVEL
- COARSE-GRAINED SOILS PREDOMINATED BY OUTWASH GRAVELS

VERTICAL SCALE 0' 10' 20'

0 30' 60'
HORIZONTAL SCALE
(VERTICAL SCALE EXAGGERATED 2X RELATIVE TO THE HORIZONTAL SCALE)



LEGEND

- FENCE LINE
- TREES
- POST-REMEDIATION GROUND SURFACE ELEVATIONS CONTOUR INTERVAL = 1 ft.
- MW-30s,i,d — QUARTERLY MONITORING WELL LOCATION AND NUMBER (s = shallow, i = intermediate, d = deep)
- SW-D-1 — SURFACE WATER SAMPLING LOCATIONS (D = DITCH; R = RIVER)
- MW-21 — GROUNDWATER ELEVATION ONLY WELL
- PA — AREA WHERE PCB IMPACTED SOILS WERE EXCAVATED
- C-1 — OUTLINE OF 2005 SOURCE REDUCTION AREA AND SUBSURFACE SLURRY MONOLITH
- ABANDONED ROCKAWAY REGIONAL SEWER LINE
- WESTERN BOUNDARY OF REGULATED WETLAND

NOTES

1. BASE MAP DEVELOPED FROM TOPOGRAPHIC SURVEY PROVIDED BY JAMES M. STEWART, INC. LAND SURVEYORS, DRAWING NO 2793-03.DWG, DATED 02-14-02.

0 40' 80'
SCALE IN FEET
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L.E. CARPENTER
WHARTON, NEW JERSEY

CROSS SECTION A - A' and B - B'

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APPROVED BY: NLC	DATE PRINTED:	**FIGURE 7**	
DATE: August 2009			

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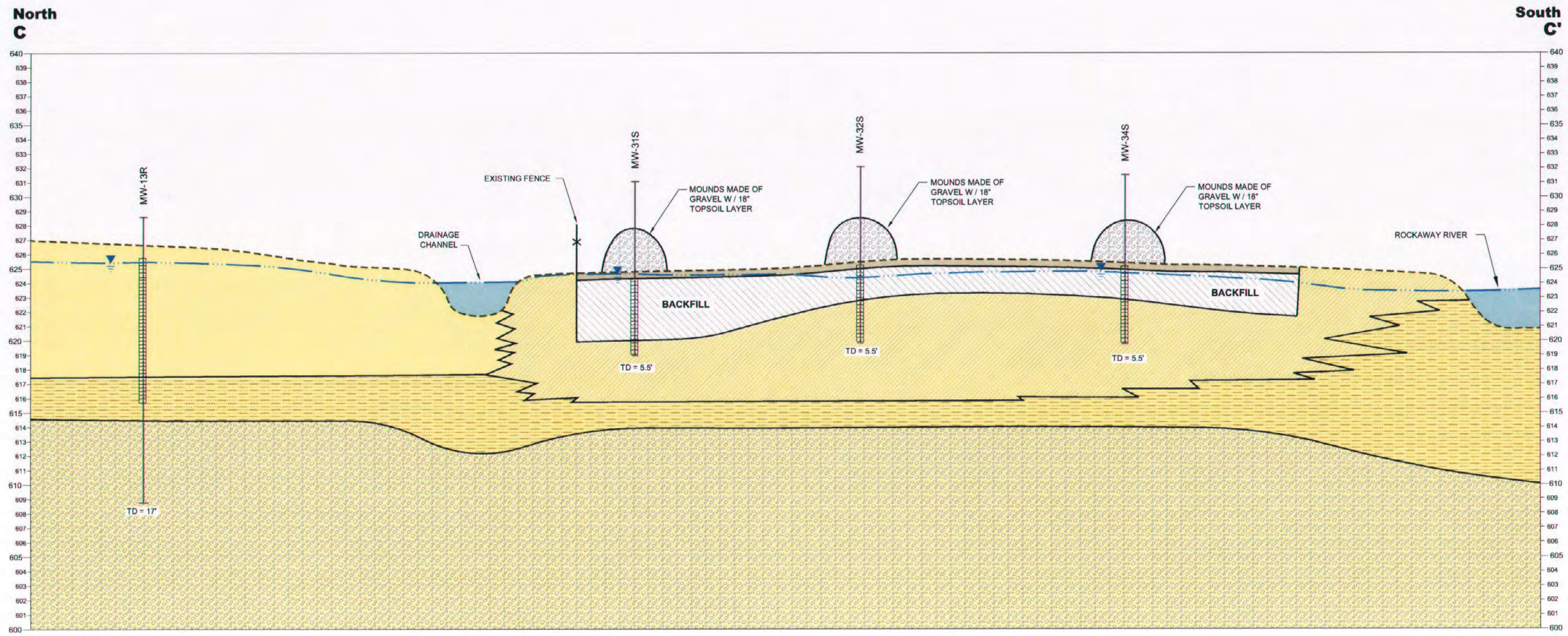
Fax: 734-971-9022

RMT COMPUTER AIDED DESIGN AND DRAFTING



LEGEND

- GROUND SURFACE
- TOPSOIL
- SLURRY MONOLITH
- NATIVE SOILS
- SURFACE WATER
- BACKFILL - PREDOMINANTLY RECYCLED MEDIUM TO COARSE SAND FROM TRICON MT. HOPE

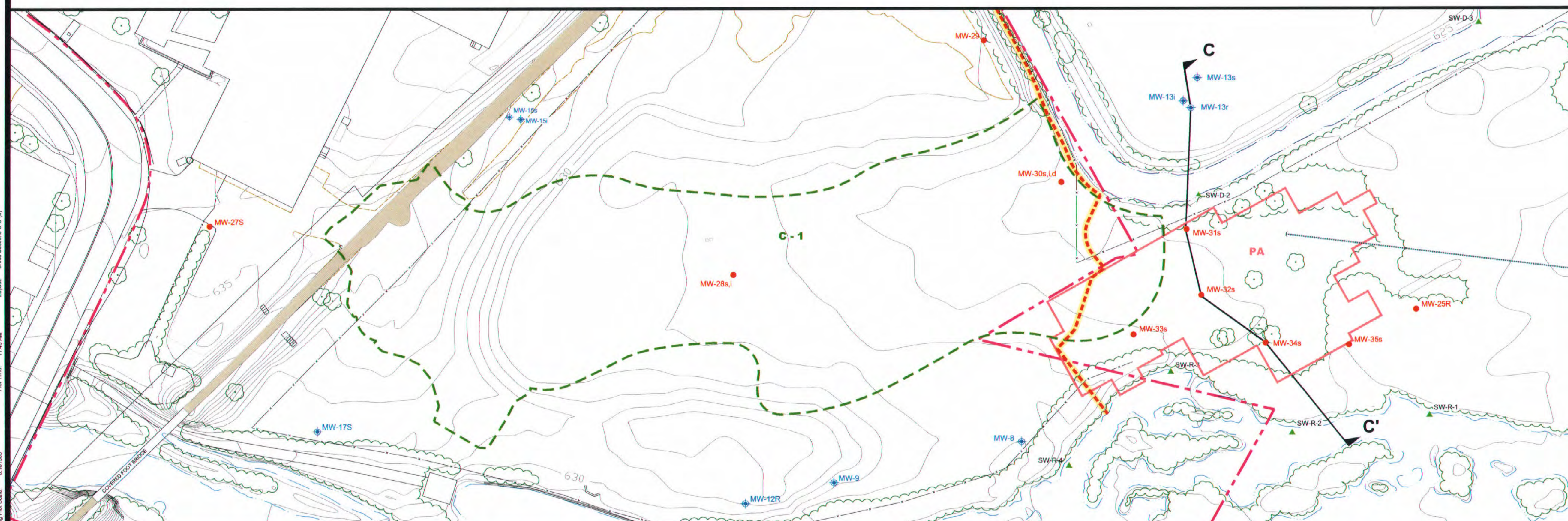
GENERAL SOIL TYPES

- HISTORICAL FILL (PRE-LEC) - PREDOMINANTLY SAND AND GRAVEL WITH PIECES OF BROKEN BRICK AND CONCRETE, AND SOME MINE TAILINGS
- PRIMARILY ALLUVIAL WITH SOIL MATRIX CONTAINING SILT, FINE SAND, AND SOME CLAYEY LENSES AND SOME COBBLES, BOULDERS, AND GRAVEL
- COARSE-GRAINED SOILS WITH VARIABLE MIXTURES OF COBBLES, BOULDERS, SAND, SILT, AND CLAY
- COARSE-GRAINED SOILS PREDOMINATED BY OUTWASH GRAVELS
- PREDOMINANTLY CLAY - DENSE, PLASTIC WITH TRACE TO SOME SAND AND GRAVEL

VERTICAL SCALE 0' 5' 10'

HORIZONTAL SCALE 0 15' 30'

(VERTICAL SCALE EXAGGERATED 2X RELATIVE TO THE HORIZONTAL SCALE)



LEGEND

- FENCE LINE
- TREES
- POST-REMEDIATION GROUND SURFACE ELEVATIONS CONTOUR INTERVAL = 1 ft.
- MW-30s,i,d — QUARTERLY MONITORING WELL LOCATION AND NUMBER (s = shallow, i = intermediate, d = deep)
- SW-D-1 — SURFACE WATER SAMPLING LOCATIONS (D = DITCH; R = RIVER)
- MW-21 — GROUNDWATER ELEVATION ONLY WELL
- PA — AREA WHERE PCB IMPACTED SOILS WERE EXCAVATED
- C-1 — OUTLINE OF 2005 SOURCE REDUCTION AREA AND SUBSURFACE SLURRY MONOLITH
- ABANDONED ROCKAWAY REGIONAL SEWER LINE
- WESTERN BOUNDARY OF REGULATED WETLAND

NOTES

1. BASE MAP DEVELOPED FROM TOPOGRAPHIC SURVEY PROVIDED BY JAMES M. STEWART, INC. LAND SURVEYORS, DRAWING NO 2793-03.DWG, DATED 02-14-02.

SCALE IN FEET 0 40' 80'

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L.E. CARPENTER
WHARTON, NEW JERSEY

CROSS SECTION C - C'

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APPROVED BY: NLC	DATE PRINTED:	**FIGURE 8**	
DATE: August 2009			

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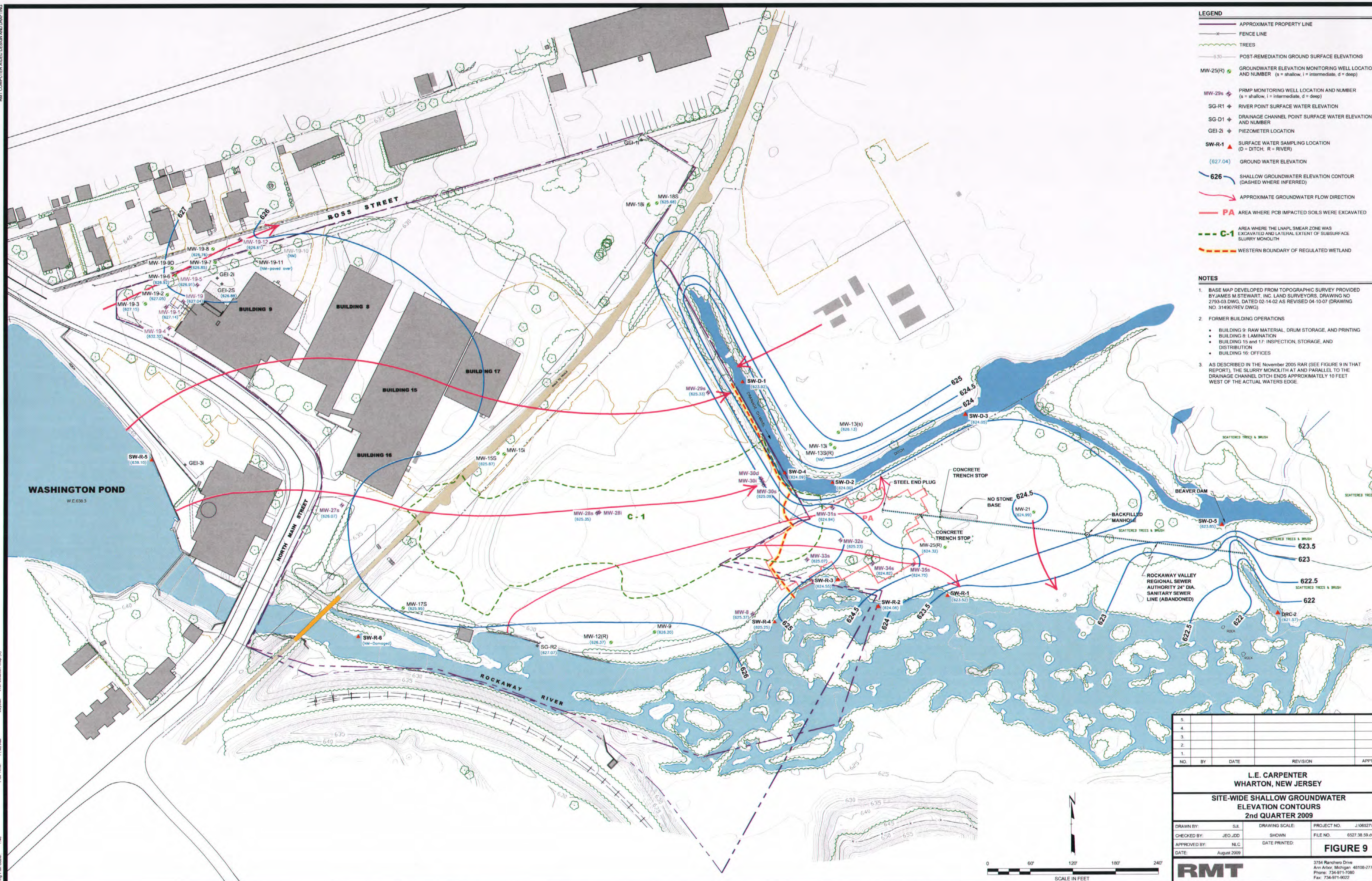

LEGEND

- APPROXIMATE PROPERTY LINE
- FENCE LINE
- TREES
- 630 — POST-REMEDIATION GROUND SURFACE ELEVATIONS
- MW-25(R) — GROUNDWATER ELEVATION MONITORING WELL LOCATION AND NUMBER (s = shallow, i = intermediate, d = deep)
- MW-29s — PRMP MONITORING WELL LOCATION AND NUMBER (s = shallow, i = intermediate, d = deep)
- SG-R1 — RIVER POINT SURFACE WATER ELEVATION
- SG-D1 — DRAINAGE CHANNEL POINT SURFACE WATER ELEVATION AND NUMBER
- GEI-2i — PIEZOMETER LOCATION
- SW-R-1 — SURFACE WATER SAMPLING LOCATION (D = DITCH, R = RIVER)
- (627.04) — GROUND WATER ELEVATION
- 626 — SHALLOW GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
- APPROXIMATE GROUNDWATER FLOW DIRECTION
- PA — AREA WHERE PCB IMPACTED SOILS WERE EXCAVATED
- C-1 — AREA WHERE THE LNAPL SMEAR ZONE WAS EXCAVATED AND LATERAL EXTENT OF SUBSURFACE SLURRY MONOLITH
- WESTERN BOUNDARY OF REGULATED WETLAND

NOTES

1. BASE MAP DEVELOPED FROM TOPOGRAPHIC SURVEY PROVIDED BYJAMES M.STEWART, INC. LAND SURVEYORS, DRAWING NO 2793-03.DWG, DATED 02-14-02 AS REVISED 04-10-07 (DRAWING NO. 314907REV.DWG).
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   - BUILDING 8: LAMINATION
   - BUILDING 15 and 17: INSPECTION, STORAGE, AND DISTRIBUTION
   - BUILDING 16: OFFICES
3. AS DESCRIBED IN THE November 2005 RAR (SEE FIGURE 9 IN THAT REPORT), THE SLURRY MONOLITH AT AND PARALLEL TO THE DRAINAGE CHANNEL DITCH ENDS APPROXIMATELY 10 FEET WEST OF THE ACTUAL WATERS EDGE.

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L.E. CARPENTER
WHARTON, NEW JERSEY

SITE-WIDE SHALLOW GROUNDWATER ELEVATION CONTOURS 2nd QUARTER 2009

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CHECKED BY: JEO,JDD		FILE NO.	6527.38.59.dwg
APPROVED BY: NLC	DATE PRINTED:	**FIGURE 9**	
DATE: August 2009			

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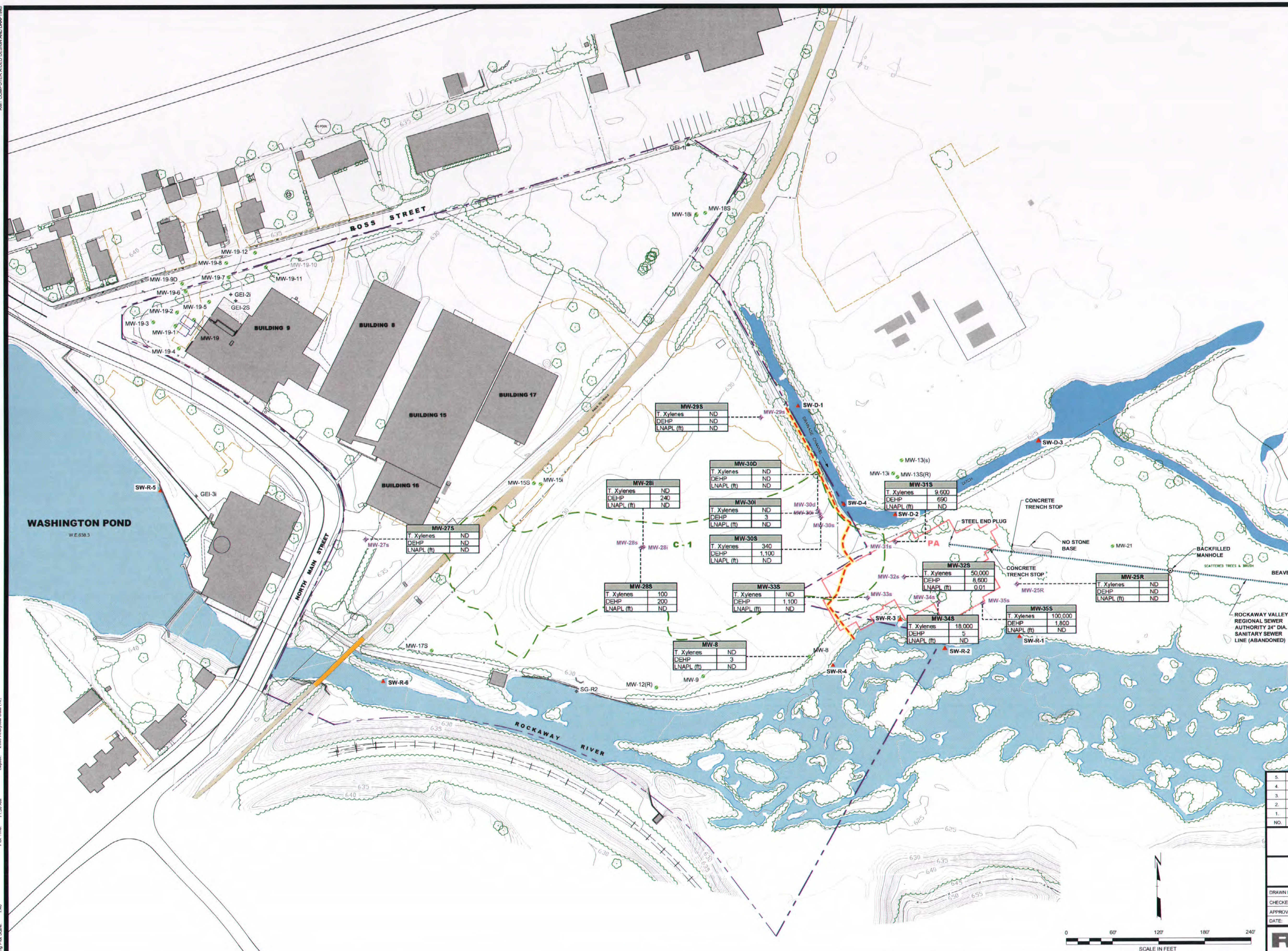
Fax: 734-971-9022



LEGEND

- APPROXIMATE PROPERTY LINE
- FENCE LINE
- TREES
- 630 — POST-REMEDIATION GROUND SURFACE ELEVATIONS CONTOUR INTERVAL = 1 ft.
- MW-25(R) — GROUNDWATER ELEVATION MONITORING WELL LOCATION AND NUMBER
- MW-29s — PRMP MONITORING WELL LOCATION AND NUMBER (s = shallow, i = intermediate, d = deep)
- SG-R1 — RIVER POINT SURFACE WATER ELEVATION AND NUMBER
- SG-D1 — DRAINAGE CHANNEL POINT SURFACE WATER ELEVATION AND NUMBER
- GEI-2i — PIEZOMETER LOCATION AND NUMBER
- SW-R-1 — SURFACE WATER SAMPLING LOCATION AND NUMBER (D = DITCH; R = RIVER)
- WESTERN BOUNDARY OF REGULATED WETLAND
- PA — AREA WHERE PCB IMPACTED SOILS WERE EXCAVATED
- C-1 — OUTLINE OF 2005 SOURCE REDUCTION AREA AND SUBSURFACE SLURRY MONOLITH
- ABANDONED ROCKAWAY REGIONAL SEWER LINE

Groundwater Results

Well ID	
T. Xylenes	
DEHP	
LNAPL (ft)	

SAMPLES COLLECTED 2nd QUARTER 2009.

TOTAL XYLENES = Total Xylenes (ug/L).
DEHP = Di-(2-ethylhexl) phthalate (ug/L).
LNAPL (ft) = Apparent product thickness.

NOTES

1. BASE MAP DEVELOPED FROM TOPOGRAPHIC SURVEY PROVIDED BYJAMES M.STEWART, INC. LAND SURVEYORS, DRAWING NO 2793-03.DWG, DATED 02-14-02 AS REVISED 04-10-07 (DRAWING NO. 314907REV.DWG).
2. FORMER BUILDING OPERATIONS
   - BUILDING 9: RAW MATERIAL, DRUM STORAGE, AND PRINTING
   - BUILDING 8: LAMINATION
   - BUILDING 15 and 17: INSPECTION, STORAGE, AND DISTRIBUTION
   - BUILDING 16: OFFICES
3. AS DESCRIBED IN THE November 2005 RAR (SEE FIGURE 9 IN THAT REPORT), THE SLURRY MONOLITH AT AND PARALLEL TO THE DRAINAGE CHANNEL DITCH ENDS APPROXIMATELY 10 FEET WEST OF THE ACTUAL WATERS EDGE.

NO.	BY	DATE	REVISION	APP'D.
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L.E. CARPENTER
WHARTON, NEW JERSEY

2Q09 GROUNDWATER ANALYTICAL DATA

DRAWN BY: SJL	DRAWING SCALE:	PROJECT NO.	J:\06527\38
CHECKED BY: JEO,JDD	SHOWN	FILE NO.	6527.38.60.dwg
APPROVED BY: NLC	DATE PRINTED:	FIGURE 10	
DATE: August 2009			

RMT
3754 Ranchero Drive
Ann Arbor, Michigan 48108-2771
Phone: 734-971-7080
Fax: 734-971-9022

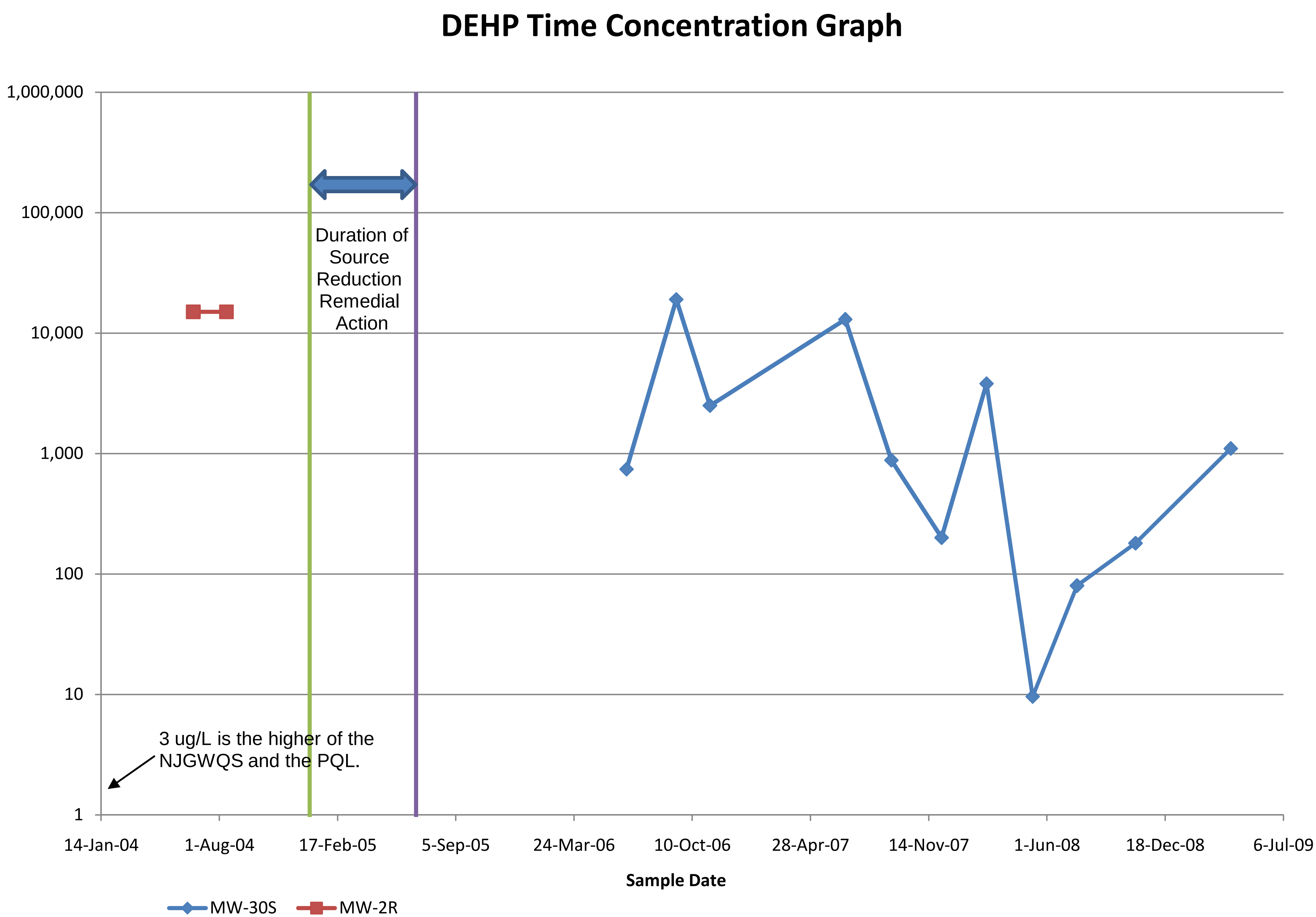


FIGURE 11
DEHP Time Concentration Graph

P:\PolyOne\Project Sites\LEC - NJ\Remediation\RA Work Plan Addendum\Draft v2 CSM [Clevett] Rev\Figures\Final Drafts\Figures 11 & 12.xls 8/26/2009

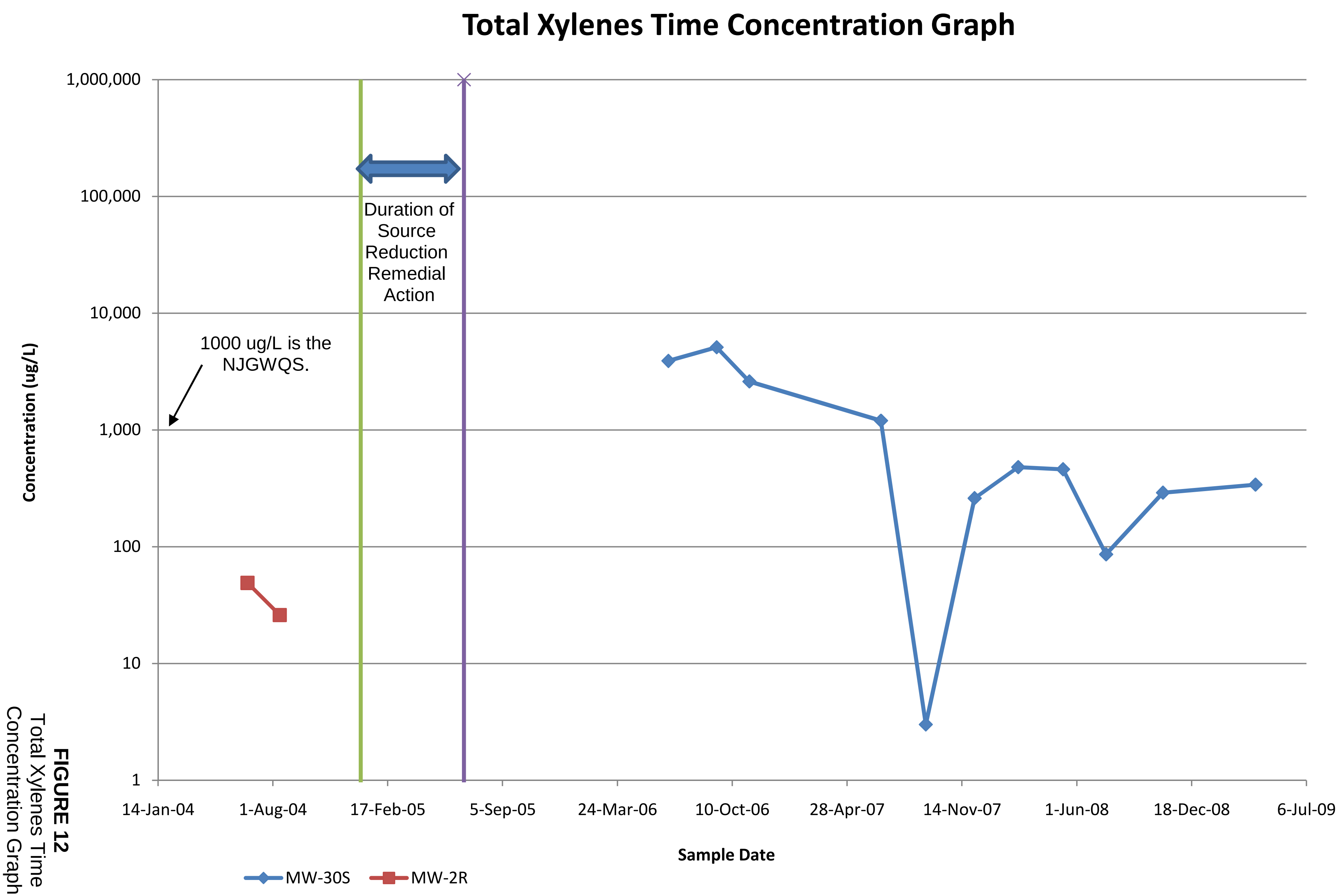
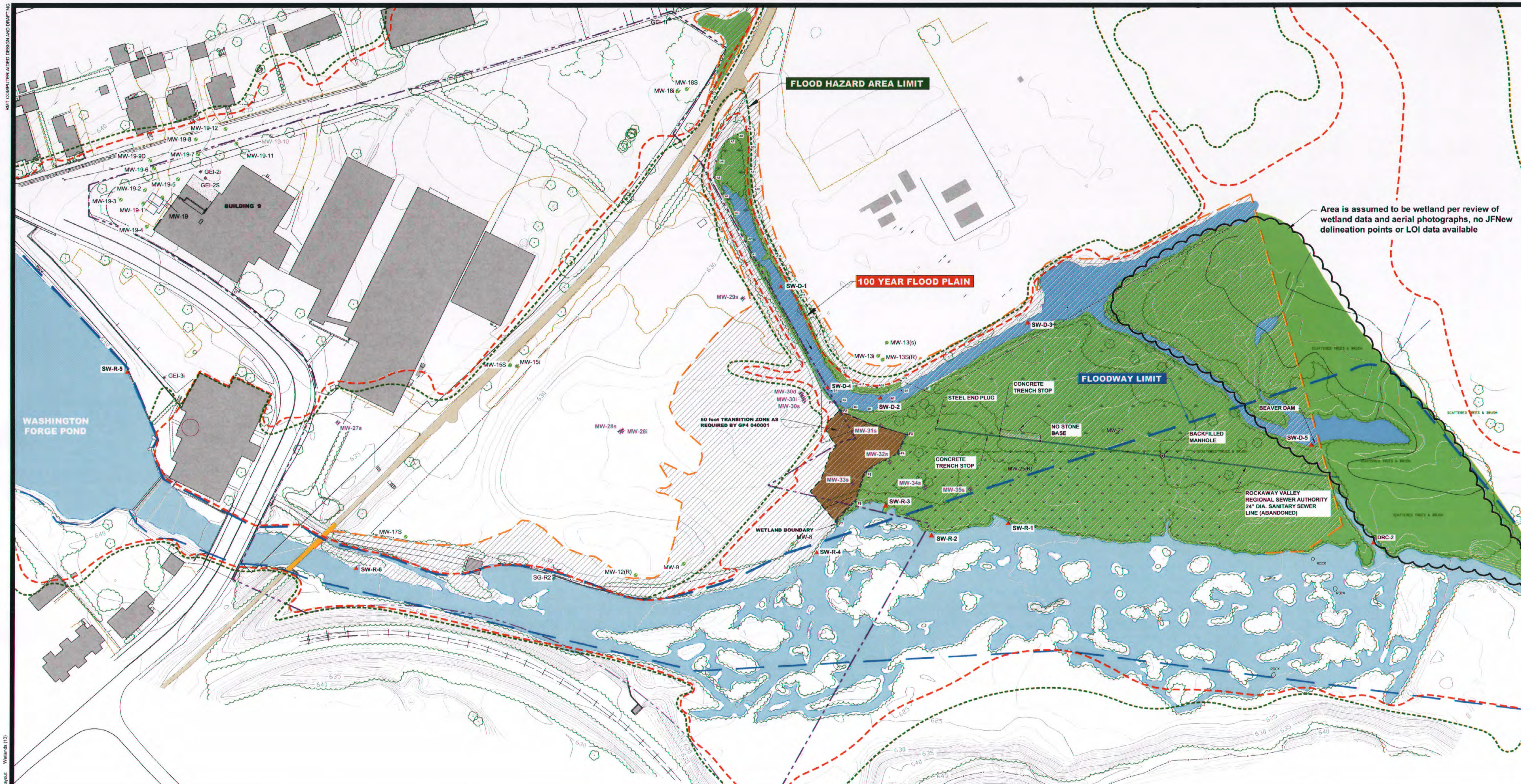


FIGURE 12
Total Xylenes Time Concentration Graph

P:\PolyOne\Project Sites\LEC - NJ\Remediation\RA Work Plan Addendum\Draft v2 CSM [Clevett] Rev\Figures\Final Drafts\Figures 11 & 12.xls 8/26/2009



LEGEND

	APPROXIMATE PROPERTY LINE
	FENCE LINE
	TREES
MW-25(R)	GROUNDWATER ELEVATION MONITORING WELL LOCATION AND NUMBER (s = shallow, i = intermediate, d = deep)
MW-29s	PRMP MONITORING WELL LOCATION AND NUMBER (s = shallow, i = intermediate, d = deep)
SG-R1	RIVER POINT SURFACE WATER ELEVATION
SG-D1	DRAINAGE CHANNEL POINT SURFACE WATER ELEVATION
GEI-2i	PIEZOMETER LOCATION
SW-R-1	SURFACE WATER SAMPLING LOCATION (D = DITCH; R = RIVER)
630	POST-REMEDIATION GROUND SURFACE ELEVATIONS CONTOUR INTERVAL = 1 ft.
	RAILS TO TRAILS
	REGULATED WETLAND
	TRANSITION ZONE
	STATE OPEN WATERS
	COVERTED FOOT BRIDGE
	(PEM) PALUSTRINE EMERGENT WETLAND
	(PFO/SS) PALUSTRINE FORESTED/ SCRUB-SHRUB
	NJDEP FLOOD HAZARD AREA
	NJDEP FLOOD HAZARD BOUNDARY
	NJDEP 100 YEAR FLOOD PLAIN
	NJDEP FLOOD HAZARD LIMITS
	NJDEP FLOODWAY LIMITS
F4	SURVEYED WETLAND DELINEATION FLAG (JFNEW, MARCH. 2004)
A19 ×	LETTERS OF INTERPRETATION, LOI 1439-00-0001.1 FLAG NUMBER (JUNE 2000)
	WETLAND BOUNDARY
	WETLAND TYPE BORDER
	ABANDONED SEWER LINE

NOTES

1. BASE MAP DEVELOPED FROM TOPOGRAPHIC SURVEY PROVIDED BY JAMES M.STEWART, INC. LAND SURVEYORS, DRAWING NO 2793-03.DWG, DATED 02-14-02 AS REVISED 04-10-07 (DRAWING NO. 314907REV.DWG).
2. WETLAND BOUNDARIES BASED ON JFNEW DELINEATION (SEPT 2004) AND LETTERS OF INTERPRETATION (LOI) (JUNE 14, 2000). 1439-00-0001.1 REFERENCES THE NEW JERSEY LANDUSE REGULATION PROGRAM FILE NUMBER.
3. ELEVATIONS FOR THE FLOOD HARZARD LINE FROM THE STATE OF NEW JERSERY, DEPARTMENT OF ENVIRONMENTAL PROTECTION, DIVISION OF WATER RESOURCES, DELINEATION OF FLOODWAY AND FLOOD HAZARD AREA (SHEETS B-16 and C-16).

0 60' 120' 180' 240'
SCALE IN FEET

NO.	BY	DATE	REVISION	APP'D.
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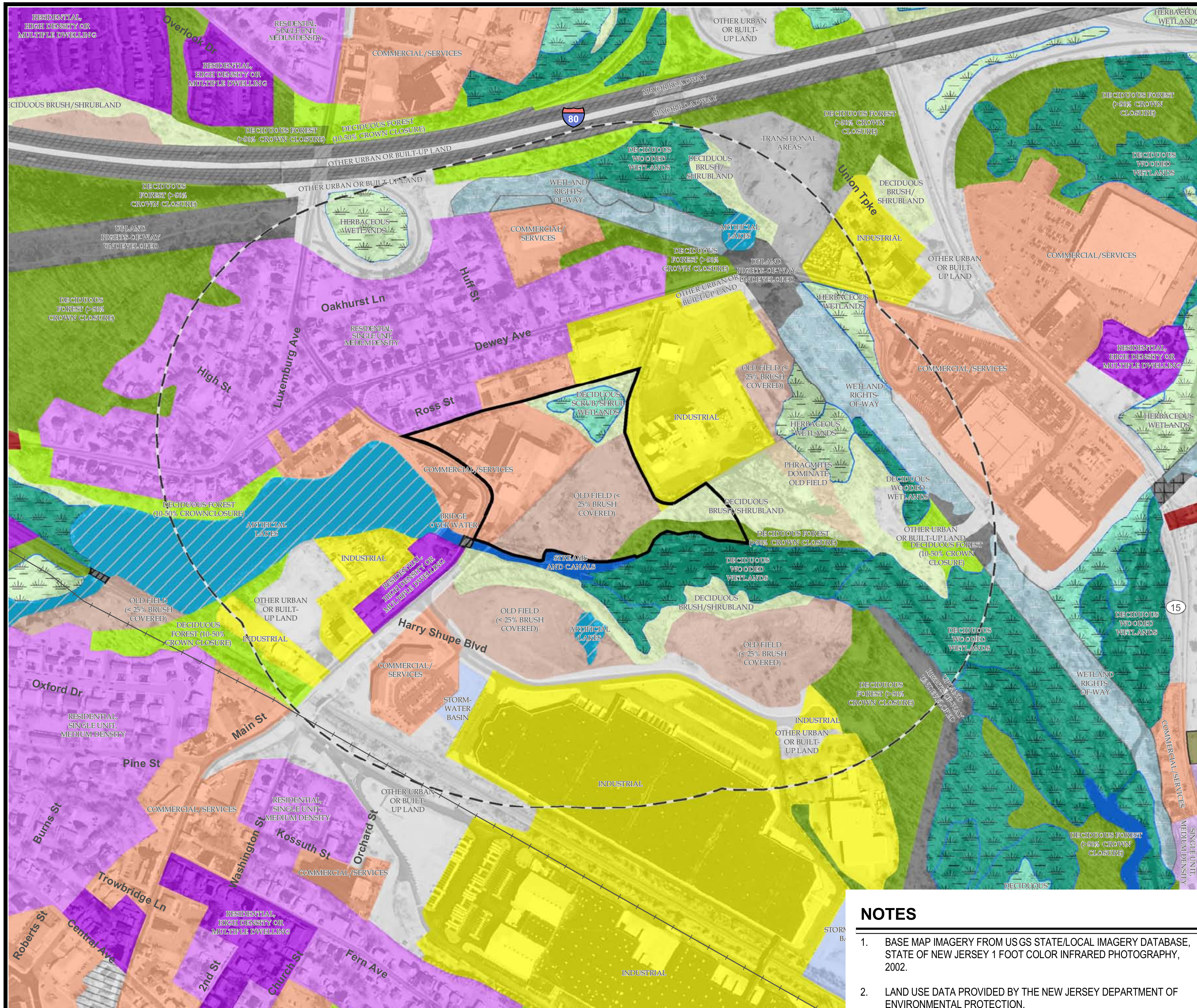
L.E. CARPENTER
WHARTON, NEW JERSEY

WETLAND, 100 YEAR FLOODPLAIN, FLOODWAY, AND FLOOD HAZARD MAP

DRAWN BY: SJL	DRAWING SCALE:	PROJECT NO.	J:\06527\38
CHECKED BY: JDD,NLC	SHOWN	FILE NO.	6527.38.63.dwg
APPROVED BY: NLC	DATE PRINTED:	**FIGURE 13**	
DATE: August 2009			

RMT

3754 Ranchero Drive
Ann Arbor, Michigan 48108-2771
Phone: 734-971-7080
Fax: 734-971-9022



LEGEND

AREA OF CONCERN BOUNDARY

1,000' RADIUS FROM AREA OF CONCERN

LAND-USE CLASSIFICATION

- TRANSPORTATION/COMMUNICATION/UTILITIES
- MILITARY INSTALLATIONS
- DECIDUOUS BRUSH/SHRUBLAND
- DECIDUOUS FOREST (10-50% CROWN CLOSURE)
- DECIDUOUS FOREST (>50% CROWN CLOSURE)
- WETLAND RIGHTS-OF-WAY
- DECIDUOUS SCRUB/SHRUB WETLANDS
- DECIDUOUS WOODED WETLANDS
- HERBACEOUS WETLANDS
- STORMWATER BASIN
- STREAMS AND CANALS
- ARTIFICIAL LAKES
- INDUSTRIAL
- COMMERCIAL/SERVICES
- RESIDENTIAL, SINGLE UNIT, LOW DENSITY
- RESIDENTIAL, SINGLE UNIT, MEDIUM DENSITY
- RESIDENTIAL, HIGH DENSITY OR MULTIPLE DWELLING
- PHRAGMITES DOMINATE OLD FIELD
- OLD FIELD (< 25% BRUSH COVERED)
- OTHER URBAN OR BUILT-UP LAND
- MIXED URBAN OR BUILT-UP LAND
- TRANSITIONAL AREAS
- UPLAND RIGHTS-OF-WAY UNDEVELOPED
- UPLAND RIGHTS-OF-WAY DEVELOPED
- MAJOR ROADWAY
- BRIDGE OVER WATER

0 300 600 FEET

1 " EQUALS 400 '
1:4,800

N

NOTES

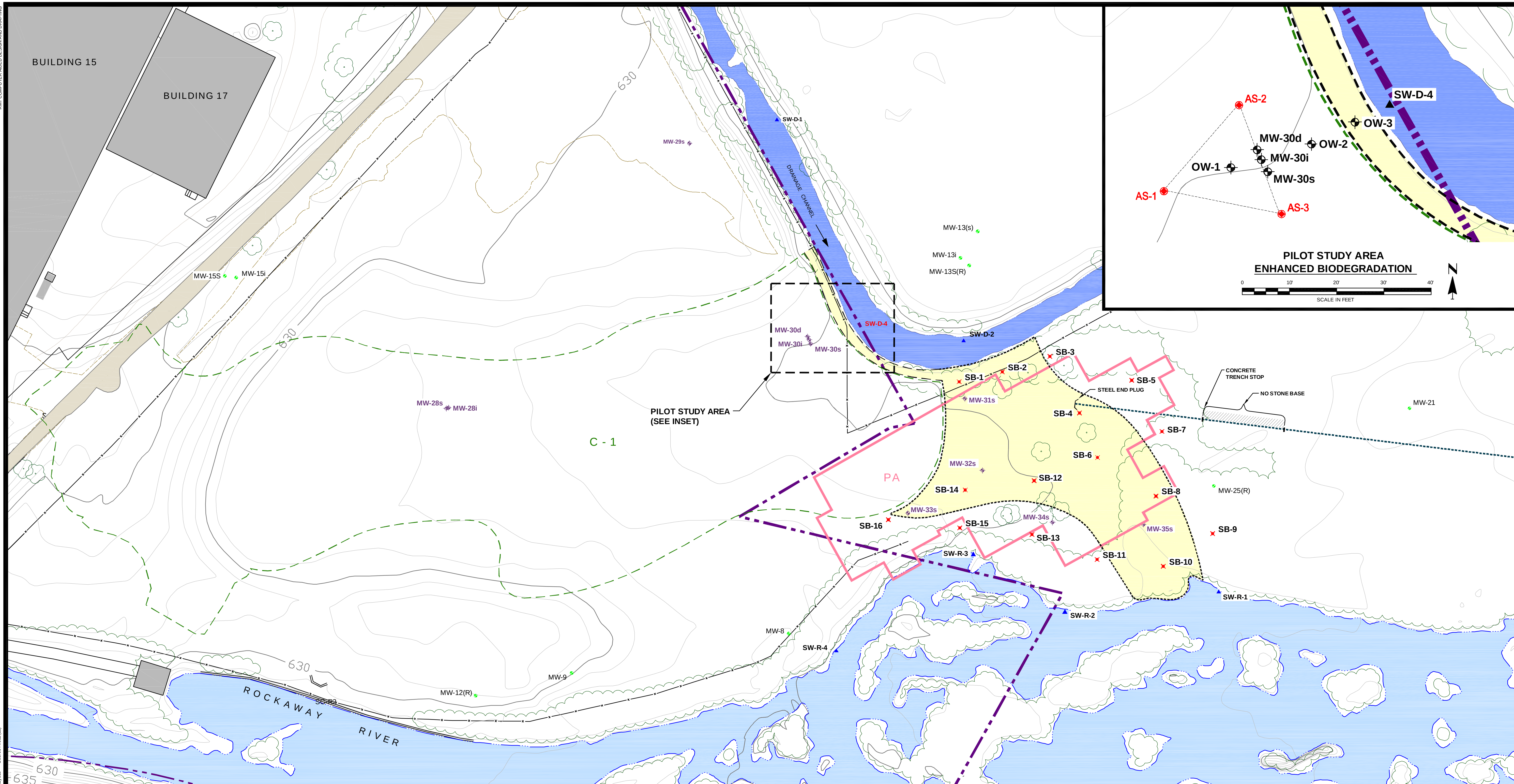
1. BASE MAP IMAGERY FROM USGS STATE/LOCAL IMAGERY DATABASE, STATE OF NEW JERSEY 1 FOOT COLOR INFRARED PHOTOGRAPHY, 2002.
2. LAND USE DATA PROVIDED BY THE NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION.

PROJECT: **L.E. CARPENTER SITE WHARTON, NEW JERSEY**

SHEET TITLE: **LOCATION OF ENVIRONMENTAL AND HUMAN RECEPTOR SENSITIVE AREAS**

DRAWN BY: PAPEZ J	SCALE:	PROJ. NO.	00-006527.30
CHECKED BY: SP	AS NOTED	FILE NO.	065273001a.mxd
APPROVED BY: NC	DATE PRINTED:	**FIGURE 14**	
DATE: AUGUST 2008	8/21/2008		

RMT
744 Heartland Trail
Madison, WI 53717-1934
P.O. Box 8923 53708-8923
Phone: 608-831-4444
Fax: 608-831-3334



RMT COMPUTER AIDED DESIGN AND DRAFTING

PROPOSED SAMPLING LOCATIONS

- SB-1 — PROPOSED SOIL BORING LOCATION
- AS-2 — AIR SPARGE WELL LOCATION AND NUMBER
- OW-1 — OBSERVATION WELL LOCATION AND NUMBER

LEGEND

- APPROXIMATE PROPERTY LINE
- FENCE LINE
- TREES
- MW-25(R) — GROUNDWATER ELEVATION MONITORING WELL LOCATION AND NUMBER (s = shallow, i = intermediate, d = deep)
- MW-29s — PRMP MONITORING WELL LOCATION AND NUMBER (s = shallow, i = intermediate, d = deep)
- SW-R-1 — SURFACE WATER SAMPLING LOCATION (D = DITCH; R = RIVER)
- PA — AREA WHERE PCB IMPACTED SOILS WERE EXCAVATED
- C-1 — OUTLINE OF 2005 SOURCE REDUCTION AREA AND SUBSURFACE SLURRY MONOLITH
- 630 — POST-REMEDIATION GROUND SURFACE ELEVATIONS, CONTOUR INTERVAL = 1 ft.
- ABANDONED SEWER LINE
- POTENTIAL REMAINING SOURCE AREA OF CONCERN

NOTES

1. BASE MAP DEVELOPED FROM TOPOGRAPHIC SURVEY PROVIDED BYJAMES M.STEWART, INC. LAND SURVEYORS, DRAWING NO 2793-03.DWG, DATED 02-14-02 AS REVISED 04-10-07 (DRAWING NO. 314907REV.DWG).
2. FORMER BUILDING OPERATIONS
   - BUILDING 9: RAW MATERIAL, DRUM STORAGE, AND PRINTING
   - BUILDING 8: LAMINATION
   - BUILDING 15 and 17: INSPECTION, STORAGE, AND DISTRIBUTION
   - BUILDING 16: OFFICES
3. AS DESCRIBED IN THE November 2005 RAR (SEE FIGURE 9 IN THAT REPORT), THE SLURRY MONOLITH AT AND PARALLEL TO THE DRAINAGE CHANNEL DITCH ENDS APPROXIMATELY 10 FEET WEST OF THE ACTUAL WATERS EDGE.

NO.	BY	DATE	REVISION	APP'D.
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1.	W.B.	July 2011	Update logo from RMT to TRC, Legend revision	K.S.

L.E. CARPENTER
WHARTON, NEW JERSEY

POTENTIAL REMAINING MW-30 AOC SOURCE AREA AND PROPOSED SAMPLING LOCATIONS

DRAWN BY: SJL	DRAWING SCALE: SHOWN	PROJECT NO. 01545.48.001
CHECKED BY: JEO,JDD		FILE NO. 01545.48.15.dwg
APPROVED BY: NLC	DATE PRINTED:	**FIGURE 15**
DATE: August 2008		

TRC
3754 Ranchero Drive
Ann Arbor, Michigan 48108-2771
Phone: 734-971-7080
Fax: 734-971-9022

LEGEND

- APPROXIMATE PROPERTY LINE
- MW-19-7 MONITORING WELL
- MW-19-10 ABANDONED APRIL 2008
- GEI-2I PIEZOMETER LOCATION
- SB-07-01 RASR SOIL BORING (RMT AUGUST 2007)
- 634.5 SPOT ELEVATION (DENNIS W.SKLAR, INC. 2009)
- FENCE LINE
- SAN SANITARY SEWER
- GAS GAS
- STM REGIONAL STORM SEWER LINE
- W WATER
- MANHOLE
- 1 PRE- DEMOLITION SURVEY PHOTOGRAPH NUMBER AND DIRECTION
- MULTIPLE FLOORS
- FORMER UNDERGROUND STORAGE TANK (WESTON 1990-1991)

NOTES

1. BASE MAP DEVELOPED FROM TOPOGRAPHIC SURVEY PROVIDED BYJAMES M.STEWART, INC. LAND SURVEYORS, DRAWING NO 2793-03.DWG, DATED 02-14-02 AS REVISED 04-10-07 (DRAWING NO. 314907REV.DWG).
2. BUILDING 9 PARAMETER & INTERIOR FEATURES DEVELOPED FROM PRE-DEMOLITION SURVEY PROVIDED BY DENNIS W. SKLAR, INC. (JANUARY 2009).
3. FORMER BUILDING OPERATIONS
   - BUILDING 9: RAW MATERIAL, DRUM STORAGE, AND PRINTING
4. OVERHEAD POWER LINES ROUGHLY PARALLEL TO SANITARY SEWER, GAS AND WATER LINES.
5. LOCATION OF FORMER UST E-3 AND E-4 APPROXIMATED BASED ON HISTORICAL SCALED DRAWINGS.

N

0 10 20 30 40

SCALE IN FEET

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L.E. CARPENTER
WHARTON, NEW JERSEY

BUILDING 9
PRE- DEMOLITION
SURVEY

DRAWN BY: SJL	DRAWING SCALE:	PROJECT NO.	J:\06527\38
CHECKED BY: NLC	SHOWN	FILE NO.	6527.38.66.dwg
APPROVED BY: NLC	DATE PRINTED:	**FIGURE 16**	
DATE: August 2009			

RMT
3754 Ranchero Drive
Ann Arbor, Michigan 48108-2771
Phone: 734-971-7080
Fax: 734-971-9022

LEGEND

- APPROXIMATE PROPERTY LINE
- MW-19-7 MONITORING WELL
- MW-19-10 ABANDONED APRIL 2008
- GEI-2I PIEZOMETER LOCATION
- WELL TO BE ABANDONED
- WELL TO BE PROTECTED AND SAVED
- FENCE LINE
- SAN SANITARY SEWER
- GAS GAS
- STM REGIONAL STORM SEWER LINE
- W WATER
- MULTIPLE FLOORS
- FORMER UNDERGROUND STORAGE TANK (WESTON 1990-1991)

NOTES

1. BASE MAP DEVELOPED FROM TOPOGRAPHIC SURVEY PROVIDED BYJAMES M.STEWART, INC. LAND SURVEYORS, DRAWING NO 2793-03.DWG, DATED 02-14-02 AS REVISED 04-10-07 (DRAWING NO. 314907REV.DWG).

0 10 20 30 40
SCALE IN FEET

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1.				

L.E. CARPENTER
WHARTON, NEW JERSEY

MONITORING WELL ABANDONMENT PLAN

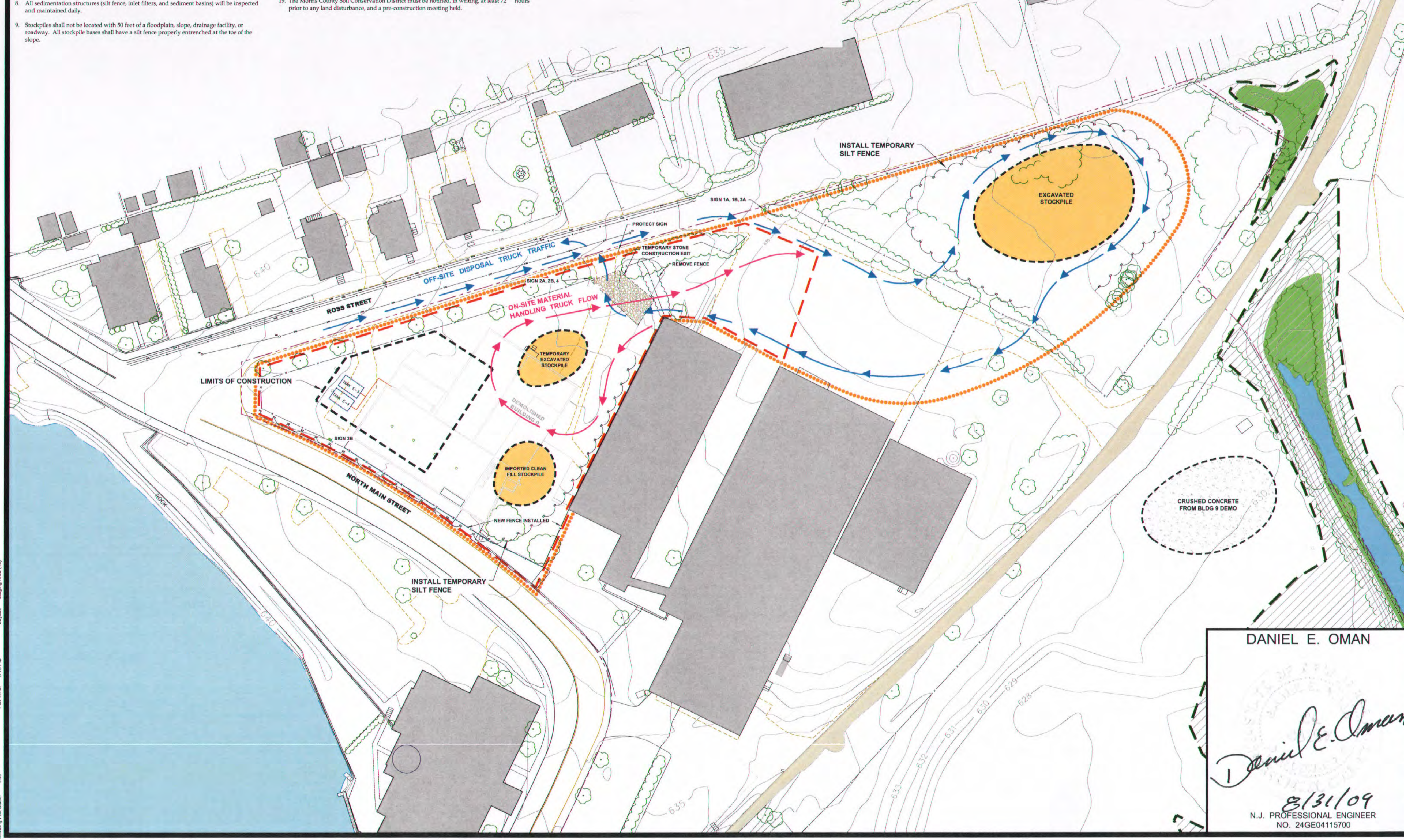
DRAWN BY: SJL	DRAWING SCALE:	PROJECT NO. J:\06527\38	
CHECKED BY: JEO	SHOWN	FILE NO. 6527.38.67.dwg	
APPROVED BY: NLC	DATE PRINTED:	**FIGURE 17**	
DATE: August 2009			

RMT
3754 Ranchero Drive
Ann Arbor, Michigan 48108-2771
Phone: 734-971-7080
Fax: 734-971-9022

Morris County - Soil Erosion & Sediment Control Notes

1. All Soil Erosion and Sediment Control Practices will be installed in accordance with the Standards for Soil Erosion and Sediment Control in New Jersey , and will be in place prior to any major soil disturbance, or in their proper sequence and maintained until permanent protection is established.
2. Any disturbed area that will be left exposed for more than thirty (30) days and not subject to construction traffic shall immediately receive a temporary seeding. If the season prohibits temporary seeding, the disturbed area will be mulched with straw or hay and tacked in accordance with the New Jersey Standards. See Note 21 below.
3. Permanent vegetation is to be established on exposed areas within ten (10) days after final grading. Mulch is to be used for protection until vegetation is established. See Note 22 below.
4. Immediately following initial disturbance or rough grading. All critical areas (steep slopes, sandy soils, wet conditions) subject to erosion will receive a temporary seeding in accordance with Note 21 below.
5. Temporary Diversion Berms are to be installed on all cleared roadways and easement areas. See the Diversion Detail.
6. Permanent seeding and stabilization to be in accordance with the "Standards for Permanent Vegetative Cover for Soil Stabilization Cover." Specified rates and locations shall be on the approved Soil Erosion and Sediment Control Plan.
7. The site shall at all times be graded and maintained so that all storm water runoff is diverted to Soil Erosion and Sediment Control facilities.
8. All sedimentation structures (silt fence, inlet filters, and sediment basins) will be inspected and maintained daily.
9. Stockpiles shall not be located with 50 feet of a floodplain, slope, drainage facility, or roadway. All stockpile bases shall have a silt fence properly entrenched at the toe of the slope.
10. A Stabilized Construction Access will be installed, whenever an earthen road intersects with a paved road. See the Stabilized Construction Access detail and chart for dimensions.
11. All new roadways will be treated with suitable subbase upon establishment of final grade elevations.
12. Paved roadways must be kept clean at all times.
13. Before discharge points become operational, all storm drainage outlets will be stabilized as required.
14. All dewatering operations must be discharged directly into a sediment filter area. The filter should be composed of a fabric or approved material. See the Dewatering detail.
15. All sediment basins will be cleaned when the capacity has been reduced by 50 percent. A clean out elevation will be identified on the plan and a marker installed on the site.
16. During and after construction, the applicant will be responsible for the maintenance and upkeep of the drainage structures, vegetation cover, and any other measures deemed appropriate by the District. Said responsibility will end when completed work is approved by the Morris County Soil Conservation District.
17. All trees outside the disturbance limit indicated on the subject plan or those trees within the disturbance area which are designated to remain after construction are to be protected with tree protection devices. See the Tree Protection detail.
18. The Morris County Soil Conservation District may request additional measures to minimize onsite or off-site erosion problems during construction.
19. The Morris County Soil Conservation District must be notified, in writing, at least 72 hours prior to any land disturbance, and a pre-construction meeting held.
20. **Topsoil Stockpile Protection**
    a. Apply Ground Limestone at a rate of 90 lbs. per 1000 sq. ft.
    b. Apply fertilizer (10-20-10) at a rate of 11 lbs. per 1000 sq. ft.
    c. Mulch stockpile with straw or hay at a rate of 90 lbs. per 1000 sq. ft.
    d. Apply a liquid mulch binder or tack to straw or hay mulch.
    e. Properly entrench a silt fence at the bottom of the stockpile.
21. **Temporary Stabilization Specifications**
    a. Apply Ground Limestone at a rate of 90 lbs. per 1000 sq. ft.
    b. Apply fertilizer (10-20-10) at a rate of 11 lbs. per 1000 sq. ft.
    c. Apply Perennial Ryegrass seed at 1 lb. per 1000 sq. ft. and Annual Ryegrass at 1 lb. per 1000 sq. ft.
    d. Mulch stockpile with straw or hay at a rate of 90 lbs. per 1000 sq. ft.
    e. Apply a liquid mulch binder or tack to straw or hay mulch.
22. **Permanent Stabilization Specifications**
    a. Apply topsoil to a depth of 5 inches (unsettled)
    b. Apply Ground Limestone at a rate of 90 lbs. per 1000 sq. ft. and work four inches into soil
    c. Apply fertilizer (10-20-10) at a rate of 11 lbs. per 1000 sq. ft.
    d. Apply Hard Fescue seed at 2.7 lbs. per 1000 sq. ft. and Creeping Red Fescue seed at 0.7 lbs. per 1000 sq. ft. and Perennial Ryegrass seed at 0.25 lbs. per 1000 sq. ft.
    e. Mulch stockpile with straw or hay at a rate of 90 lbs. per 1000 sq. ft.
    f. Apply a liquid mulch binder or tack to straw or hay mulch.

NOTE: 72 HOURS PRIOR TO ANY SOIL DISTURBANCE, NOTICE IN WRITING SHALL BE GIVEN TO THE MORRIS COUNTY SOIL CONSERVATION DISTRICT AND A PRE-CONSTRUCTION MEETING HELD



LEGEND

- APPROXIMATE PROPERTY LINE
- FENCE LINE
- TREES
- POST-REMEDIATION GROUND SURFACE ELEVATIONS
- SANITARY SEWER
- GAS
- REGIONAL STORM SEWER LINE
- WATER
- LIMITS OF HEALTH &SAFETY EXCLUSION ZONE
- LIMIT OF DISTURBANCE LINE
- OFF-SITE DISPOSAL TRUCK TRAFFIC
- ON-SITE MATERIAL HANDLING TRUCK FLOW
- SILT FENCE
- NJDEP FLOOD HAZARD BOUNDARY
- RAILS TO TRAILS
- REGULATED WETLAND
- STATE OPEN WATERS
- NJDEP FLOOD HAZARD AREA

NOTES

1. BASE MAP DEVELOPED FROM TOPOGRAPHIC SURVEY PROVIDED BYJAMES M.STEWART, INC. LAND SURVEYORS, DRAWING NO 2793-03.DWG, DATED 02-14-02 AS REVISED 04-10-07 (DRAWING NO. 314907REV.DWG).

0 40' 80' 120' 160'
SCALE IN FEET

DANIEL E. OMAN

Daniel E. Oman

8/31/09

N.J. PROFESSIONAL ENGINEER
NO. 24GE04115700

NO.	BY	DATE	REVISION	APP'D.
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1.				

L.E. CARPENTER
WHARTON, NEW JERSEY

MW19HS1 CONSTRUCTION SITE LAYOUT

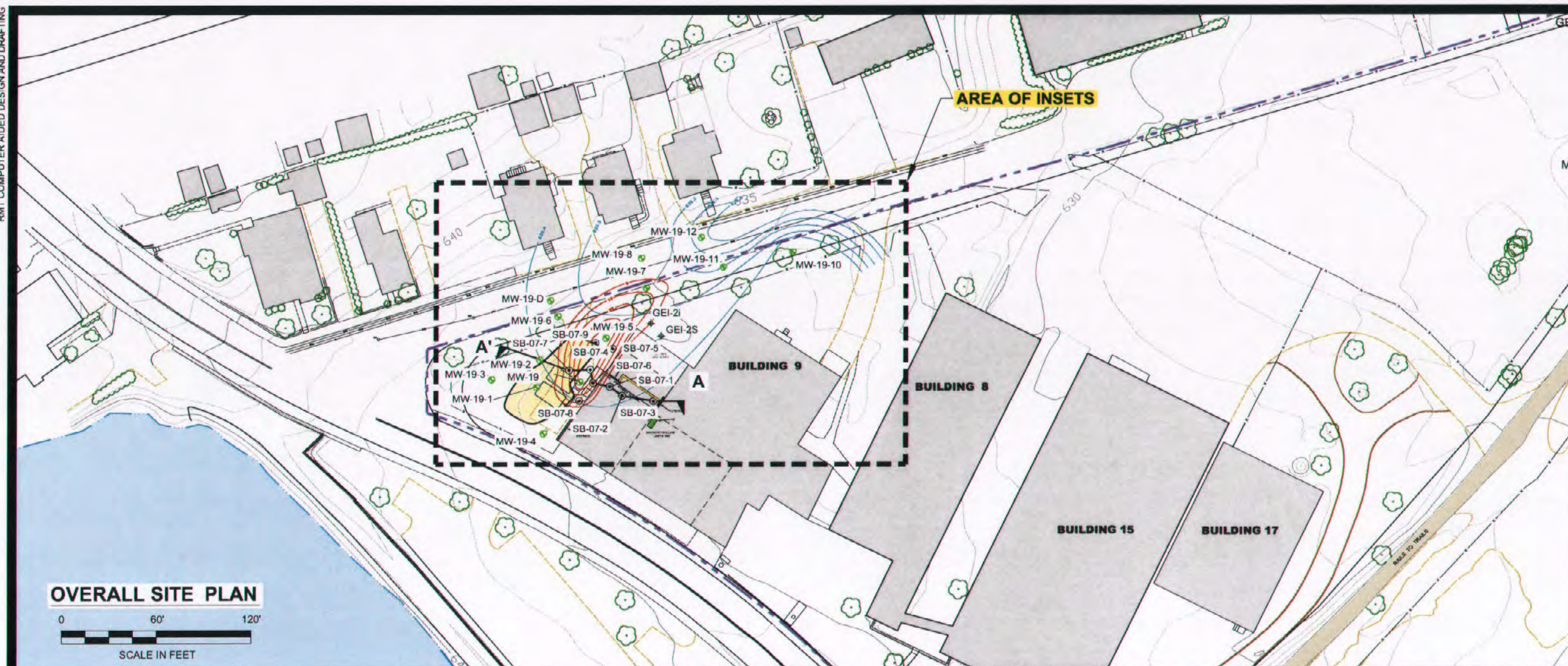
DRAWN BY: SJL	DRAWING SCALE:	PROJECT NO. J:\06527\38
CHECKED BY: NLC	SHOWN	FILE NO. 6527.38.69.dwg
APPROVED BY: NLC	DATE PRINTED:	**FIGURE 18**
DATE: August 2009		

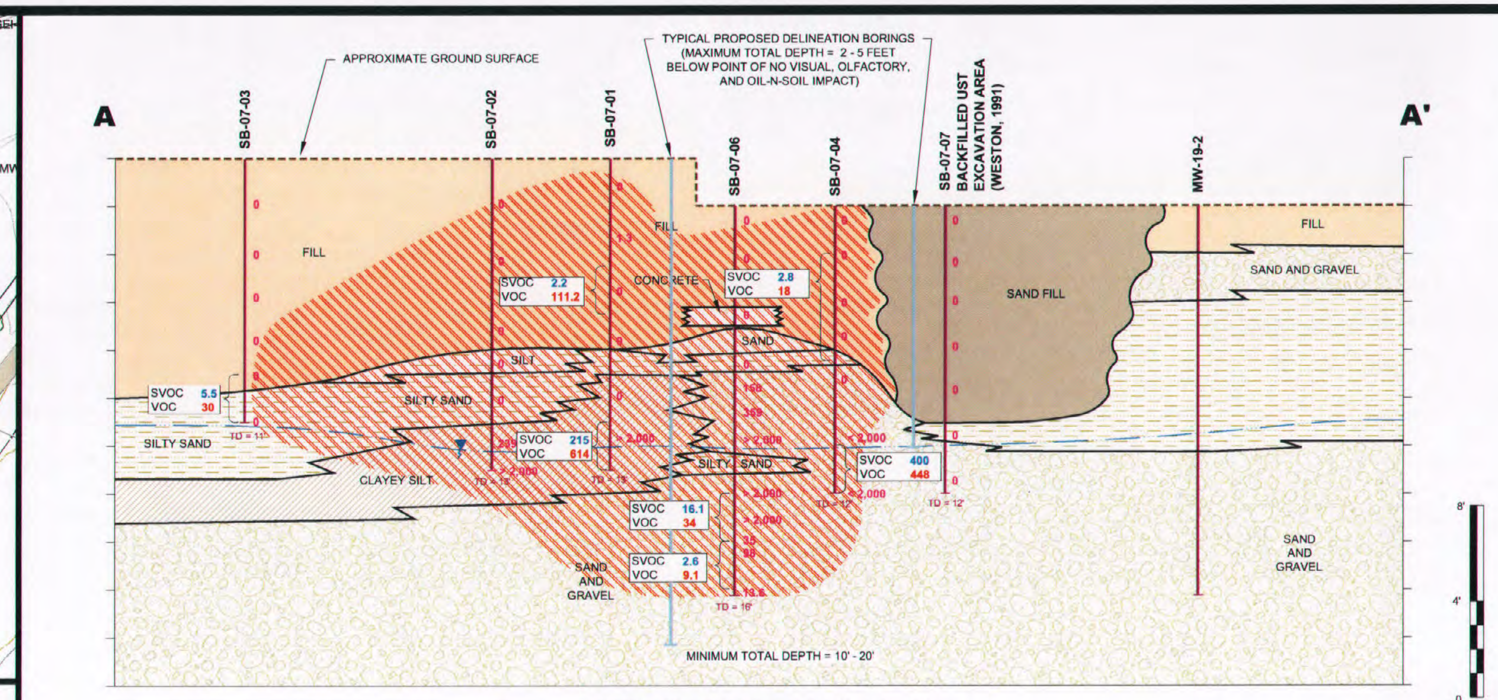
RMT

3754 Ranchero Drive
Ann Arbor, Michigan 48108-2771
Phone: 734-971-7080
Fax: 734-971-9022

RMT COMPUTER AIDED DESIGN AND DRAFTING

Drawing Name: J:\06527\38\6527.38.69.dwg Dwg Size: 1.18 Mb
Operator Name: LUCIDO, SAM Plot Date: April 2008
Drawing Plot Scale: 1:40 Plot Time: 3:19 PM Layout: Staging Area (18)

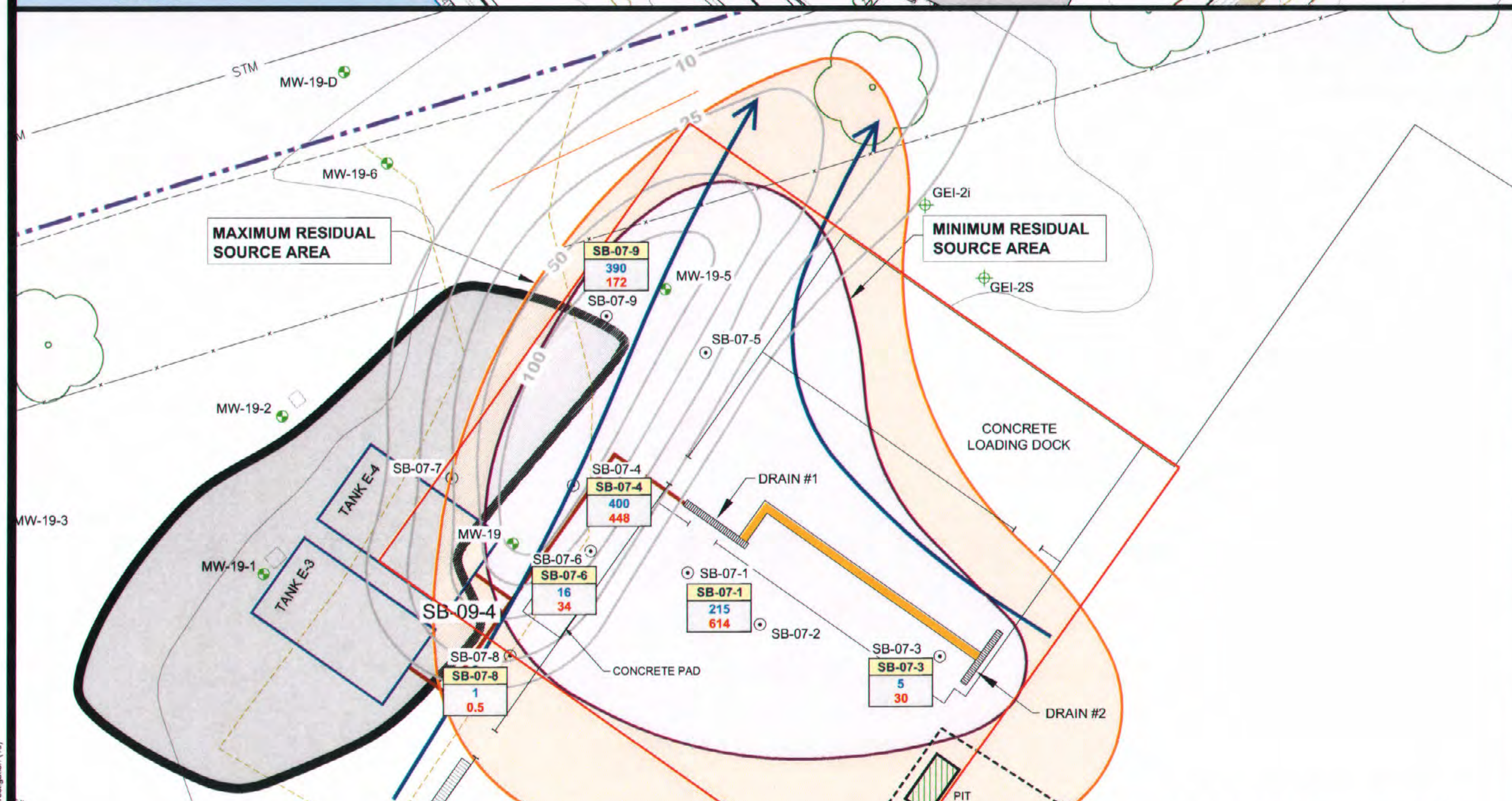




GEOLOGIC CROSS SECTION A - A'

HORIZONTAL SCALE: 1" = 8'

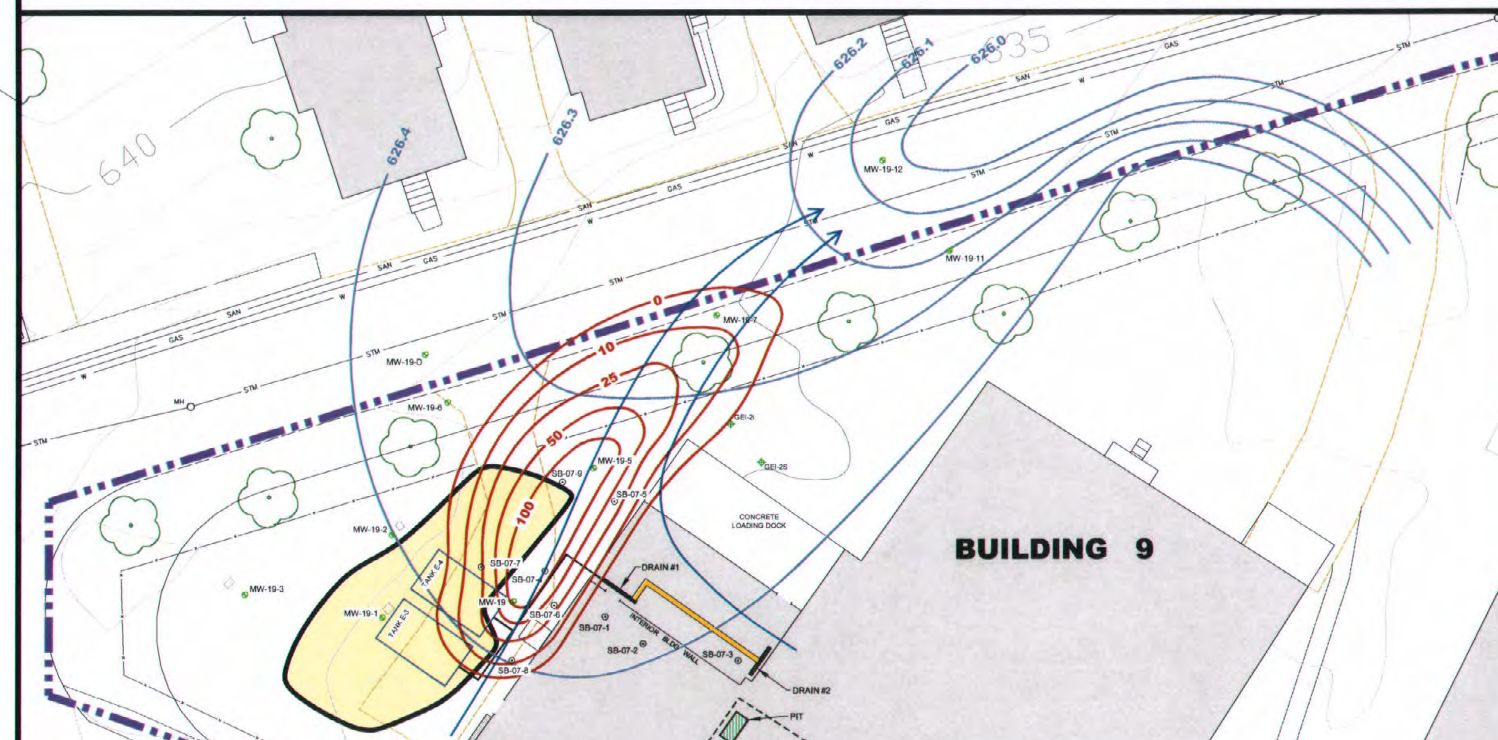
VERTICAL SCALE: 1" = 4'



BUILDING 9 PLAN VIEW DETAIL

0 10' 20'

SCALE IN FEET



BUILDING 9 INSET

0 20' 40'

SCALE IN FEET

LEGEND

- APPROXIMATE PROPERTY LINE
- FENCE LINE
- TREES
- MW-19 — EXISTING MONITORING WELL LOCATION AND NUMBER
- GEI-2i — PIEZOMETER LOCATION
- SB-07-01 — RASR SOIL BORING (RMT AUGUST 2007)
- 626 — GROUNDWATER ELEVATION CONTOUR (2Q07)
- 10 — ISOCONCENTRATION CONTOUR FOR TOTAL MAXIMUM BTEX (ppm) IN GROUNDWATER (2Q07)
- ABANDONED PIPE FLOOR CONNECTION BETWEEN 2 FLOOR DRAINS (APPROX. 2ft. WIDE)
- 1994 SOIL EXCAVATION (WESTON)
- VERTICAL EXTENT
- FORMER FLOOR DRAIN
- FORMER PRODUCTION PIT (BASE OF PIT NOT IN CONNECTION WITH SUBSURFACE SOILS BUT RATHER IN BUILDING 9 SUBBASEMENT)
- TANK E-3 — FORMER UNDERGROUND STORAGE TANK (WESTON 1990 - 1991)
- MAXIMUM RESIDUAL SOURCE AREA
- MINIMUM RESIDUAL SOURCE AREA
- APPROXIMATE GROUNDWATER FLOW DIRECTION
- SB-07-4 — BORING ID
- 400 — TOTAL SVOC's IN SMEAR ZONE SOIL (mg/kg)
- 448 — TOTAL VOC's IN SMEAR ZONE SOIL (mg/kg)

NOTES

1. BASE MAP DEVELOPED FROM TOPOGRAPHIC SURVEY PROVIDED BYJAMES M.STEWART, INC. LAND SURVEYORS, DRAWING NO 2793-03.DWG, DATED 02-14-02 AS REVISED 04-10-07 (DRAWING NO. 314907REV.DWG).
2. FORMER BUILDING OPERATIONS
   - BUILDING 9: RAW MATERIAL, DRUM STORAGE, AND PRINTING
   - BUILDING 8: LAMINATION
   - BUILDING 15 and 17: INSPECTION, STORAGE, AND DISTRIBUTION
3. LOCATION OF 1994 WESTON SOIL EXCAVATION AND FORMER UST E-3 AND E-4 APPROXMATED BASED ON HISTORICAL SCALED DRAWINGS.

NO.	BY	DATE	REVISION	APP'D.
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L.E. CARPENTER
WHARTON, NEW JERSEY

MW19HS1 CONTAMINANT NATURE AND EXTENT

DRAWN BY: SJL	DRAWING SCALE:	PROJECT NO. J:\06527\38	
CHECKED BY: JEO	SHOWN	FILE NO. 6527.38.68.dwg	
APPROVED BY: JDD	DATE PRINTED:	**FIGURE 19**	
DATE: August 2009			

RMT

3754 Ranchero Drive
Ann Arbor, Michigan 48108-2771
Phone: 734-971-7080
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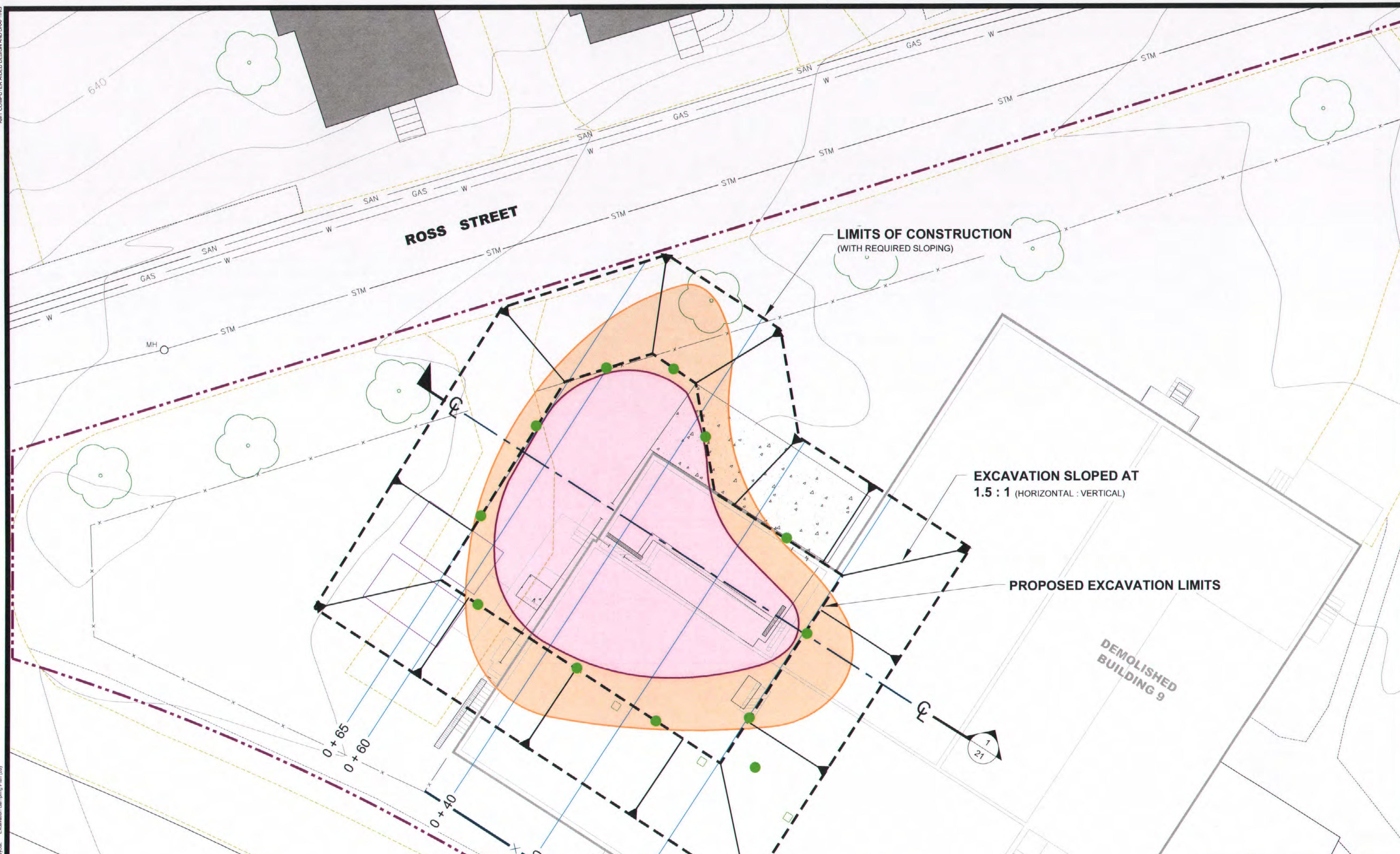

LEGEND

- APPROXIMATE PROPERTY LINE
- MINIMUM RESIDUAL SOURCE AREA
- MAXIMUM RESIDUAL SOURCE AREA
- FENCE LINE
- SANITARY SEWER
- GAS
- REGIONAL STORM SEWER LINE
- WATER
- FORMER UNDERGROUND STORAGE TANK (WESTON 1990-1991)
- CONFIRMATORY SIDEWALL SAMPLES

NOTES

1. BASE MAP DEVELOPED FROM TOPOGRAPHIC SURVEY PROVIDED BYJAMES M.STEWART, INC. LAND SURVEYORS, DRAWING NO 2793-03.DWG, DATED 02-14-02 AS REVISED 04-10-07 (DRAWING NO. 314907REV.DWG).
2. TOTAL EXCAVATION VOLUME APPROXIMATELY 2,550 IN-PLACE CUBIC YARDS. THE PROPOSED EXCAVATION LIMIT CONSISTS OF APPROXIMATELY 1,435 IN-PLACE CUBIC YARDS AND DEFINES THE MINIMUM RESIDUAL SOURCE AREA SOILS TO THE FULL DEPTH OF THE EXCAVATION (12'). THE LIMIT OF CONSTRUCTION CONSISTS OF APPROXIMATELY 1,115 ADDITIONAL IN-PLACE CUBIC YARDS THAT SURROUND THE EXCAVATION LIMIT, AND CONSIST OF SOILS THAT MAY BE REMOVED DUE TO RESIDUAL CONTAMINATION AND / OR FOR SIDE SLOPE STABILITY.
3. CONFIRMATION SAMPLES PROPOSED EVERY 20 FEET OF EXCVATED SIDE SLOPE.

0 10 20 30 40

SCALE IN FEET

DANIEL E. OMAN

Daniel E. Oman

8/31/09

N.J. PROFESSIONAL ENGINEER
NO. 24GE04115700

NO.	BY	DATE	REVISION	APP'D.
5.				
4.				
3.				
2.				
1.				

L.E. CARPENTER
WHARTON, NEW JERSEY

MW19HS1 EXCAVATION AND CONFIRMATORY SOIL SAMPLING PLAN

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DATE: August 2009			

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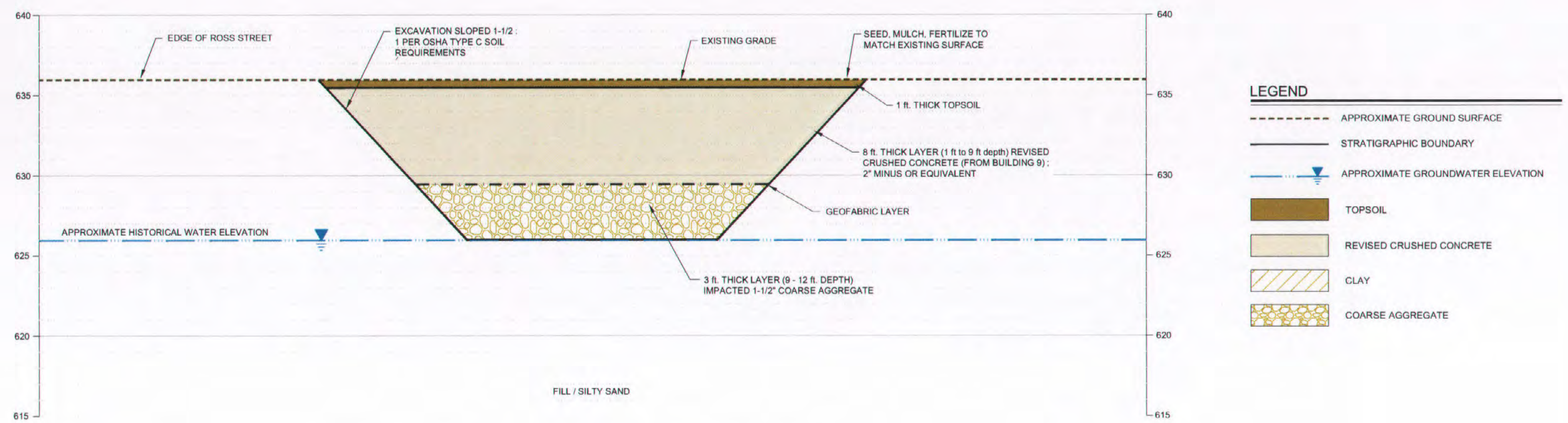
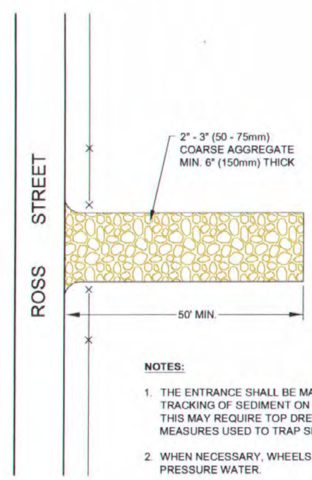


1/21 **SITE PROFILE A - A' (TYPICAL)**

SCALE: VER: 1" = 5'
HOR: 1" = 50'

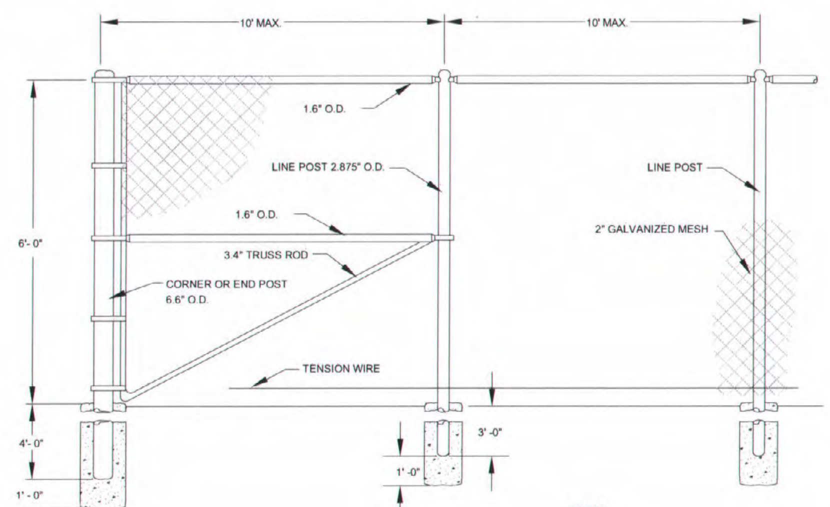


NOTES:

1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OF SEDIMENT ON TO PUBLIC RIGHT-OF-WAY, OR ROSS STREET THIS MAY REQUIRE TOP DRESSING. REPAIR AND / OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED AT DECON PAD WITH HIGH PRESSURE WATER.

2/21 **TEMPORARY STONE CONSTRUCTION ENTRANCE / EXIT DETAIL (TYPICAL)**

NOT TO SCALE

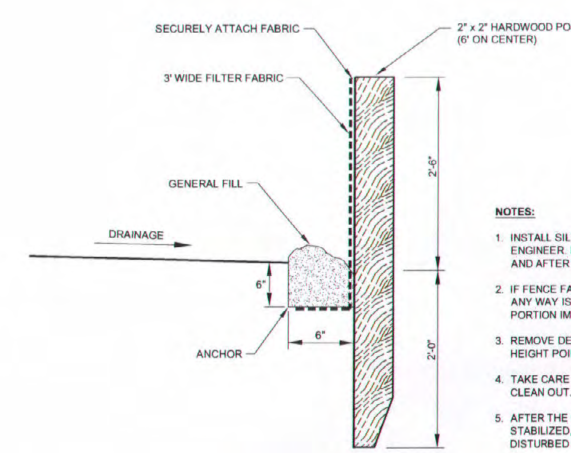


NOTES:

1. CEMENT GATE POSTS, CORNER POSTS, AND EVERY OTHER FOURTH POST ON STRAIGHT-AWAYS.

3/21 **CHAIN LINK FENCE**

NOT TO SCALE



NOTES:

1. INSTALL SILT FENCE AT LOCATIONS AS DIRECTED BY ENGINEER. INSPECT THE SILT FENCE PERIODICALLY AND AFTER EACH STORM EVENT.
2. IF FENCE FABRIC TEARS, STARTS TO DECOMPOSE, OR IN ANY WAY IS DAMAGED, REPLACE THE AFFECTED PORTION IMMEDIATELY.
3. REMOVE DEPOSITED SEDIMENT WHEN IT REACHES 33% HEIGHT POINT OR IS CAUSING THE FABRIC TO BULGE.
4. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEAN OUT.
5. AFTER THE CONTRIBUTING DAMAGE AREA HAS BEEN STABILIZED, REMOVE SEDIMENT DEPOSITS, BRING THE DISTURBED AREA TO GRADE, STABILIZE.

4/21 **SEDIMENT CONTROL (SILT) FENCE**

NOT TO SCALE

DANIEL E. OMAN

Daniel E. Oman

8/31/09

N.J. PROFESSIONAL ENGINEER
NO. 24GE04115700

NO.	BY	DATE	REVISION	APP'D.
5.				
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MW19HS1 CONSTRUCTION DETAILS

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DATE:	August 2009			

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Drawing Name: J:\06527\38\6527.38.71.dwg
Operator Name: LUCIDO, SAM
Drawing Plot Scale: 1:20
Dwg Size: 0.15 Mb
Plot Date: April 2008
Plot Time: 2:49 PM
Layout: MW19HS1 Construction Details (21)